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NEW ENGLAND'S AGRICULTURAL POSITION

JOSIAH C. FOLSOM

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NEW ENGLAND'S AGRICULTURAL POSITION

by

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Thesis submitted for the degree of
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NEW ENGLAND'S AGRICULTURAL POSITION

I. INTRODUCTION

New England's agriculture has been denounced repeatedly as backward and a failure, and some of the critics have been decidedly caustic and pessimistic in their outspokenness. One writer (1)* stated:

> "New England's agriculture is a thing apart from New England. That group of states represents the ultimate in industrial supremacy; broadly visualized, the agriculture therein stands for all that is retrogressive."
>
> "Once the agricultural colossus of the nation, New England farming today is the inspiration of gloom. For more than half a century the product has declined. The rural population, unable to endure, has migrated to the cities or to the fields of the west, leaving a serried rear-guard to keep up the fight. New England's Colonial and Revolutionary history and her wealth of manufacturing industry must be her boast. Her agriculture is a broken reed."

Elsewhere (2) he continued:

> "Outside the boundaries of New England, the belief prevails that these states are composed of series of abandoned farms with cultivated areas thrown in to break the monotony; that anybody can go in there and pick up a farm for a little more than a song."

He interviewed the secretary of the Connecticut Board of Agriculture who denied that such charges applied to his state; but official assurances from Washington informed him that the state had some 300,000 acres of cut-over land and many neglected farms.

Very frequently there appear in print statements to the effect that crops once raised extensively are seldom grown now in New England and yields are shrinking; that farm animals and their products are diminishing in number and amount; that farm products generally are inferior in quality and smaller in quantity than they should be; that the agricultural industry is becoming steadily less capable of sustaining New England's population; that rural population is declining in what were once prosperous agricultural sections; that the numbers of farmers and of farms are dwindling and that farm property is lessening in value.

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*Numbers and characters in parenthesis refer to the bibliography.

Specific cases are frequently pointed out in support of these assertions. The western Massachusetts hill towns are held up as once prosperous farming communities now greatly reduced in population, productivity and value of property (3). Many point it out as evidences of poor agriculture that the farm family is no longer self-sustaining as it was a century or less ago; that the New England states have now to bring in the bulk of their foods; and that small grain crops such as wheat are raised much less than half a century ago. The critics point at the decline in numbers of farm livestock; especially dairy cattle and sheep (5,6) and their products in the face of the increase of population. New England farms are said not to be yielding a dollar for a dollar's worth of work (7). Official data prove the average dairy farm loses money (15,16,17).

That New England lands are worn out is often asserted, backed at times by statements of great amounts of fertilizers used in intensive agriculture. Instances are cited of the inability of farmers on good lands to sell products profitably because of the distance to markets or because of poor roads (19,34). Dealers, we are told, have difficulty in getting the desired quantity and quality of New England products (5). The typical small New England fields, stone walls, lack of power tools and other improved equipment are points of criticism and the Yankee's conservatism and individualism are attacked. His methods are called unprogressive.

With these complaints and criticisms in mind Dr. Alexander E. Cance suggested that the writer study the situation, thus furnishing the subject and the purpose of this paper. To him and to each other member of the staff of the Department of Agricultural Economics is made acknowledgement of indebtedness for suggestions and help.

II. INVESTIGATION OF THE SITUATION

Four general methods were used in this study. Statistical data, especially the reports of the United States Census Bureau from 1850 to 1910, and that of 1920 so far as available in early April 1921, and of U. S. Department of Agriculture data were utilized. The object was to find the comparative average accomplishment of the farmers of New England and the United States over a series of years; and to get some idea as to possible greater farm production in New England.

Some critics seem to have based their assertions upon old or incomplete or biased data, and oppose all changes in existing conditions, not recognizing the impossibility and undesirability of retaining things as they were. The second method of study was by questioning some of the assertions of critics of New England agriculture as to bias or accuracy of data and then to note how certain economic forces have caused changes in New England agriculture. There have been changes; for instance, small grains are grown much less than at one time; the livestock industry has diminished to great extent. Causes underlying some of these changes were studied, such as the cheapening of production by specialization in districts well adapted to given crops; such as the fact that transportation of agricultural products for great distances is now economically possible.

The third step noted the great and increasing variety of modern demands for foodstuffs and materials, demands growing in both variety and amount. The question of adaptability of New England to meet many of these calls can be discussed and clearly demonstrated. Self-sufficiency of the district to supply its needs wholly will be considered.

Lastly was undertaken a justification of certain characteristics of New England farmers and their methods, such as the conservatism toward adoption of new methods; of the individualism of the average farmer in view of his nearness to markets and the difficulties of specialization and cooperation; of the use of particular agricultural methods which seem inefficient.

III. COMPARISON OF NEW ENGLAND AND MASSACHUSETTS PRODUCTION WITH NATIONAL PRODUCTION.

For the purposes of this study of production, the agencies of production, agricultural workers, work animals, farms, and productive animals will be considered first; then some of the principal field, tree and small fruit, and animal products will be taken up.

Data are limited for the most part to the sources found in the various census reports of the United States, beginning with that of 1850, concluding with that of 1910 in part, with 1920 in some cases where New England and Massachusetts material is now available. It had been intended to make use of data contained in the annual Yearbooks of the United States Department of Agriculture issued between 1910 and 1920, but examination of the figures proved it unwise to do so, especially with the idea of using the estimates for 1919 in comparison with Fourteenth Census figures now obtainable. Based as these figures are, upon percentual estimates in comparison with each previous year's figures and finally upon the returns of each census, each year's estimates add to the cumulative errors as census years recede, too often making wide variations. Consequently, though desirable, in many instances no deductions can be had from figures later than 1910 or 1920.

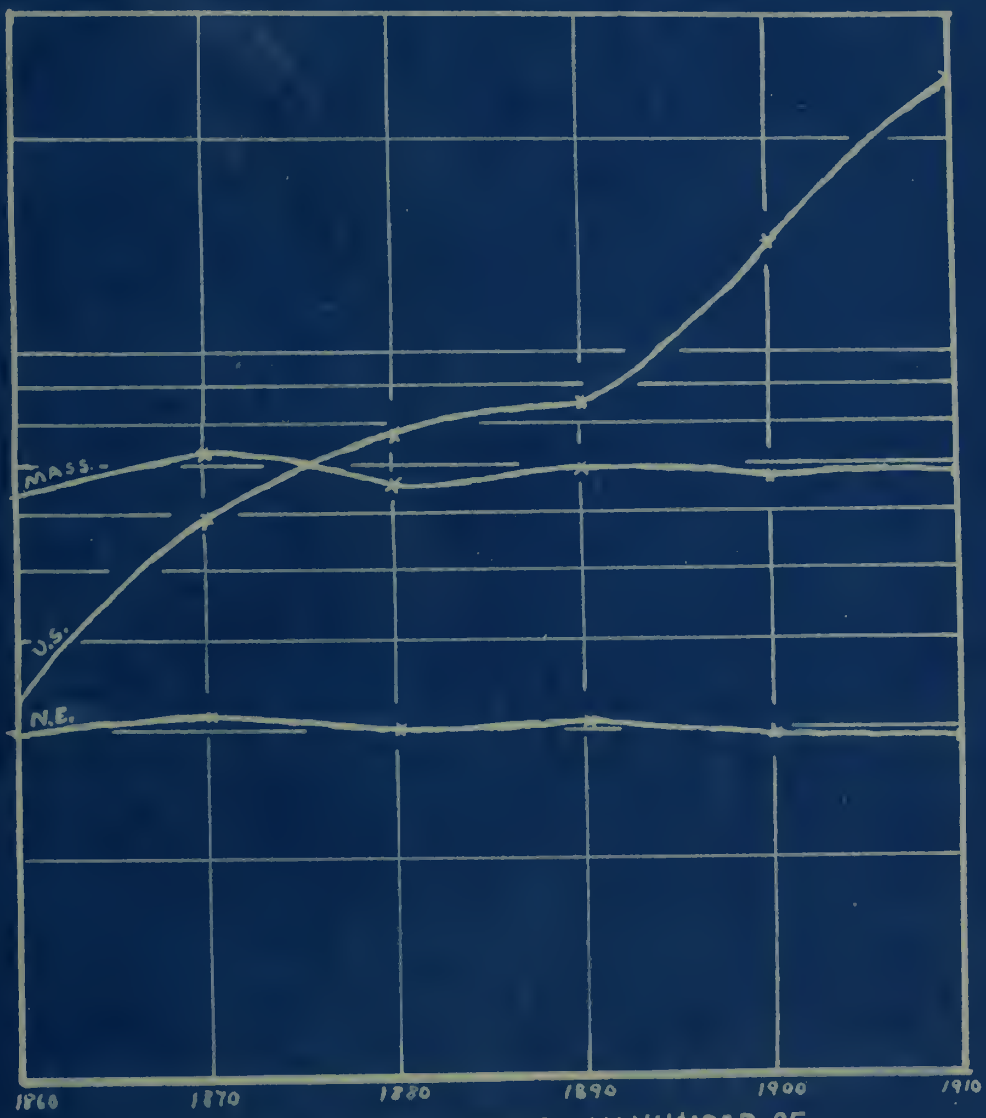
Agencies of Agricultural Production

The total population of the United States in 1860 was 31,443,321 of which 3,241,138 persons, 10% were considered as engaged in agricultural pursuits; New England had 3,135,283 people with 297,294 or 9½% in agriculture; Massachusetts had 1,231,066 with 63,271, just above 5% in agriculture. Since then the total population has grown steadily to 92,174,515 in 1910 with 12,413,605 or 14% in agriculture. New England and Massachusetts population totals climbed to

POPULATION STATISTICS
for the
United States, New England and Massachusetts,
1850 - 1920, by Census Years.

Year	United States	Total Population New England	Massachusetts	References
1850	23,191,876	2,728,116	994,514	
1860	31,443,321	3,135,283	1,231,066	
1870	38,558,371	3,487,924	1,457,351	
1880	50,155,783	4,010,529	1,783,085	
1890	62,622,250	4,700,749	2,238,943	
1900	76,085,794	5,592,017	2,805,346	24/10
1910	92,174,515	6,552,681	3,366,416	32/30-31
1920	105,710,620	7,~~[illegible]~~ 400,~~[illegible]~~ 909	3,852,356	140/P

Year	Persons Engaged in Agricultural Pursuits United States	New England	Massachusetts	References
1860	3,241,138	297,294	63,271	3[illegible]/[illegible]656-79
1870	5,922,471	314,810	72,810	90/P.670-1
1880	7,680,493	301,815	64,973	1[illegible]/P.716
1890	8,565,926	304,448	69,720	12[illegible]/P.cxxviii-lx
1900	10,438,219	287,469	66,551	1[illegible]/P.ccxv
1910	12,413,605	280,760	67,156	13[illegible]/P.91
1920	10,636,826	221,162	49,839	



SHOWING RATE OF CHANGE IN NUMBER OF PERSONS ENGAGED IN AGRICULTURAL PURSUITS IN THE UNITED STATES, NEW ENGLAND AND MASSACHUSETTS BY DECADES, 1860 TO 1910.

CENSUS REPORT DATA.

PERCENTAGE of TOTAL POPULATION
ENGAGED in AGRICULTURAL PURSUITS
in the
United States, New England and Massachusetts,
1860 to 1910, by Decades.

Year	United States	New England	Massachusetts
1860	10.31	9.48	5.14
1870	15.35	9.02	4.99
1880	15.31	7.52	3.64
1890	13.67	6.47	3.11
1900	13.71	5.14	2.37
1910	13.46	4.28	[illegible]
1920	*10.06*	*2.99*	*1.29*

It is to be noted that the only increase in percentage of total population of the United States engaged in agricultural pursuits came between 1860 and 1870. Since then the percentage has declined steadily; in New England and Massachusetts the decline has been continuous since 1860.

6,552,881 and 3,358,416 respectively, of which 280,760 and 67,156 persons were in agriculture,- 4% and 2% of the totals. Thus the proportion of the farming population, small at best at first, has dwindled to comparative insignificance so far as numbers are concerned. Moreover, the agricultural population in absolute numbers has in New England not held its own and in Massachusetts gained but little through the years. The inserted chart shows strikingly these changes in agricultural population.

The farms of the nation have increased in number somewhat as have its agricultural workers; those of New England and Massachusetts have vatied irregularly, sometimes inversely, with only a small increase in numbers at best, and with this gain more than lost by 1930. The lands in these farms have shown somewhat the same changes in total acreages, with a drag in New England and a loss of 15% in Massachusetts in 1910, with consequent decreased average size of farms. In the same period the proportion of improved lands in farms of the United States has increased from 37% to 54% the total farm areas; but in New England the reverse has occurred, a drop from 61% to 37% taking place; Massachusetts dropped from 64% to 41%; between 1910 and 1930 both dropped to 36%. That this land lost from the acreage of improved land has gone back to scrub woodland seems to be generally believed. In a study of conditions in the Town of Billerica, Massachusetts, Mr. Warren H. Manning (25) mapped out very graphically the manner in which between 1853 and 1913 nearly 5,000 acres, almost a third of the town's area, has gone from tillage to sprout lands.

Work animals on farms may be considered to include mature horses or those two or more years of age; and oxen or steers of the same age are included. Here again numbers have risen for the nation. The farm worker of 1860 was using on the average 2.61 work animals;

STATISTICS of FARMS
in the
United States, New England and Massachusetts.
Censuses of 1850 - 1920.

Number of Farms

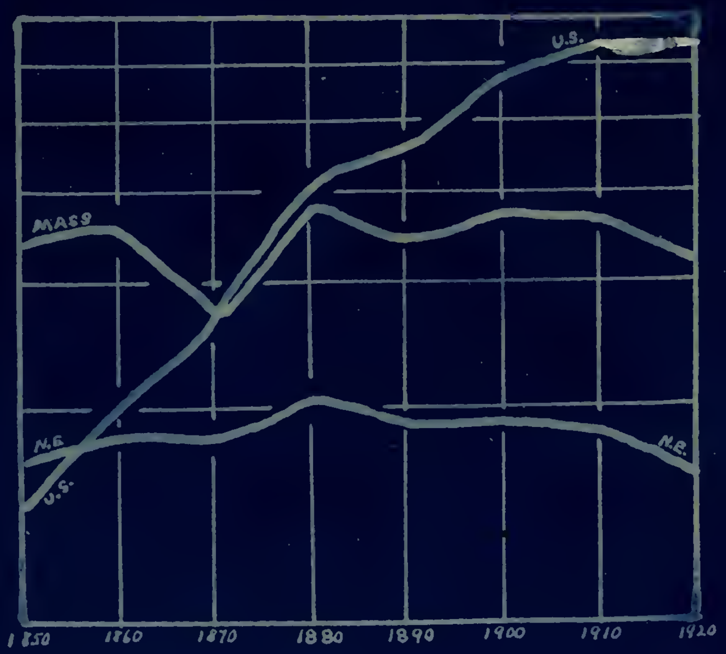
Year	United States	New England	Massachusetts	References
1850	1,449,073	167,651	34,069	
1860	2,044,077	183,942	35,601	
1870	2,659,985	180,649	26,500	
1880	4,008,907	207,232	38,406	
1890	4,564,641	189,961	34,374	
1900	5,737,372	191,888	37,715	12C/I688
1910	6,361,502	188,802	36,917	32/137
1920	6,449,998	156,564	32,001	26

All Land in Farms (Acres)

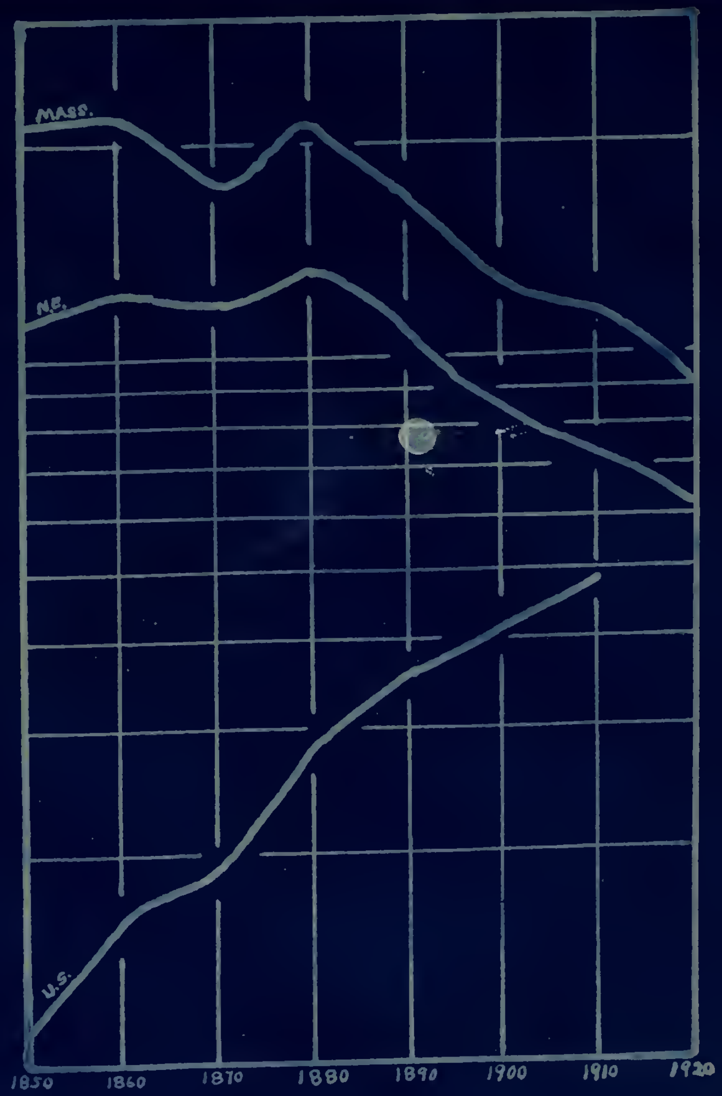
Year	United States	New England	Massachusetts	References
1850	293,560,614	18,367,453	3,356,012	
1860	407,212,538	20,110,922	3,338,724	
1870	407,735,041	19,569,863	2,730,283	
1880	536,081,835	21,483,772	3,359,079	
1890	623,218,619	19,755,584	2,998,282	
1900	838,591,774	20,548,999	3,147,064	12C/I692
1910	878,798,325	19,714,931	2,857,941	32/138, 139, 140
1920	955,883,715	16,990,642	2,494,477	26

Improved Land in Farms (Acres)

Year	United States	New England	Massachusetts	References
1850	113,032,614	11,150,594	2,133,436	
1860	163,110,720	12,215,771	2,155,512	
1870	188,921,099	11,997,540	1,736,221	
1880	284,771,042	13,148,466	2,128,311	
1890	357,616,755	10,738,930	1,657,024	
1900	414,498,487	8,134,403	1,292,132	12C/I 692
1910	473,451,750	7,254,904	1,164,501	32/138, 139, 140
1920	503,073,007	6,114,601	908,834	26



NUMBERS OF FARMS.



IMPROVED FARM LANDS.

SHOWING RATE OF CHANGES IN
NUMBERS OF FARMS AND
ACREAGES OF IMPROVED FARM LANDS IN
THE UNITED STATES, NEW ENGLAND,
MASSACHUSETTS, 1850 TO 1920. CENSUS DATA.
BY DECADES.

in 1910 he had the use of only 1.40 - a cut of 46% in his animal power. In New England the man of 1850 had the use of 1¾ animals; in 1910 his successor had 1 1/5, nearly a third less. Similarly, in Massachusetts the worker had 1 1/5 animals at first, later not quite the full use of one. This indicates more efficient use of animal power everywhere or more intensive man labor, or both.

Productive animals on farms, - cattle, poultry, sheep and swine, - all show increase in numbers in the country, with drops at 1870 in most cases, probably due to Civil War effects, as this factor is noted frequently in other data. New England has held her neat cattle well, losing only 8% of all, but milch cows gained over 45% up to 1900, dropping since then to just under 40% net in 1910 and 1920. The closer differentiation of classes of cattle used in the Fourteenth Census Report probably means greater gain than figures indicate, as many beef-type cows producing some milk had previously been included as milch cows. Massachusetts shows similar gain but greater loss, having now scarcely more cows than in 1850.

Poultry has increased less markedly as the tables show. Increase in flocks has been general up to 1910, more than doubling them for the United States; New England not quite doubling; and Massachusetts gaining 87%. Both New England and Massachusetts show decided losses since 1910. It is probably safe to attribute much of the loss to the disturbance of the poultry industry during the recent World War when grain and feed prices forced the killing of large numbers of birds, estimated at 70% in Massachusetts in 1917 ([illegible]). Poultry per agricultural worker increased on the whole up to 1910, - 48% for the nation, 105% in New England, 81% in Massachusetts.

While sheep increased from [illegible],723,[illegible] to 39,644,9[illegible] in the United States from 1850 to 1910, in New England the number dropped from 2,257,583 to 30[illegible],443 and in Massachusetts from 18[illegible],651 to [illegible],69[illegible],

WORK ANIMALS on FARMS
# of the
United States, New England and Massachusetts.
Censuses of 1850 - 1920.

Number of Mature Horses

Year	United States		New England		Massachusetts		References
1850	4,336,719	1.00	213,274	1.00	42,216	1.00	
1860	6,249,174	1.44	238,992	1.12	47,786	1.13	
1870	7,145,370	1.65	269,363	1.26	41,389	.98	
1880	10,357,488	2.39	324,066	1.52	59,629	1.41	
1890	14,969,467	3.45	364,349	1.74	66,656	1.57	112/85
1900	15,505,966	3.57	365,045	1.72	71,937	1.70	
1910	17,430,418	4.02	348,326	1.63	63,161	1.50	50/773
1920	17,220,900	3.97	292,236	1.37	48,965	1.16	[illegible]
1925	15,312,584	3.53	255,234	1.20	43,173	1.02	

Number of Working Oxen

1850	1,700,744	293,285	46,611	
1860	2,254,911	267,960	35,221	
1870	1,319,271	196,742	24,430	
1880	993,841	137,581	14,571	
1890	1,117,494	111,461	8,551	112/85
1900	#	65,405	3,075	(29/1523)

for

The 1900 census figures give 'steers' of various ages; the number of steers 2 years of age or older are probably closely comparable with those of working oxen in New England and are so used here; but for the United States as a whole the figures are not comparable.

Number of Work Animals
(In part, the sum of the above tables.)

1850	6,037,463	506,559	88,827
1860	8,504,085	506,952	83,007
1870	8,464,641	453,119	65,809
1880	11,351,329	461,647	74,200
1890	16,086,961	430,310	75,460
1900	15,505,966	365,045	71,937
1910#	17,430,418	348,326	63,161
1920#	17,220,418	292,236	48,965

Mature horses only.

AGRICULTURAL LIVESTOCK ON FARMS.

Number of Certain Animals
in the

United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1860 - 1919.)

UNITED STATES.

Work Animals

Year	Agricultural Worker.	Unit Total Population
1860	2.61	.27
1870	1.43	.22
1880	1.48	.23
1890	1.96	.26
1900*	1.49	.20
1910*	1.40	.19
1920	1.52	.17

NEW ENGLAND.

Year	Agricultural Worker.	Unit Total Population
1860	1.77	.17
1870	1.46	.13
1880	1.53	.12
1890	1.58	.10
1900*	1.27	.07
1910*	1.22	.05
1920*	1.32	.04

MASSACHUSETTS.

Year	Agricultural Worker.	Unit Total Population
1860	1.36	.07
1870	.90	.04
1880	1.14	.04
1890	1.05	.03
1900*	1.03	.03
1910*	.94	.02
1920*	.98	.01

* Mature horses only considered.

AGRICULTURAL LIVESTOCK ON FARMS.

Number of Certain Animals
in the

United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1850 - 1919.)

UNITED STTATES.

Year	Horses (Mature)		Neat Cattle		Swine	
	Agric'l. Worker	Unit Total Population	Agricul. Worker.	Unit Total Population	Agric'l. Worker	Unit Total Population
1850	--	..19	--	.76	--	1.31
1860	1.93	.20	7.90	.81	10.34	1.07
1870	1.21	.18	4.03	.62	4.24	.65
1880	1.35	.27	4.68	.72	6.22	.95
1890	1.75	.24	6.00	.82	6.70	.92
1900	1.49	.20	5.02	.69	6.02	.83
1910	1.40	.19	4.35	.59	4.69	.63
1920	--	--	--	--	--	--

NEW ENGLAND

Year	Horses (Mature)		Neat Cattle		Swine	
	Agric'l. Worker	Unit Total Population	Agricul. Worker.	Unit Total Population	Agric'l. Worker	Unit Total Population
1850	--	.08	--	.54	--	.13
1860	.87	.08	5.29	.50	1.10	.10
1870	.82	.07	4.31	.39	.77	.07
1880	1.07	.08	4.98	.37	1.20	.09
1890	1.21	.08	4.64	.30	1.34	.09
1900	1.27	.07	4.58	.24	1.26	.06
1910	1.22	.05	4.16	.18	1.41	.06
1920	--	.04	--	.17	--	.05

MASSACHUSETTS

Year	Horses (Mature)		Neat Cattle		Swine	
	Agric'l. Worker	Unit Total Population	Agricul. Worker.	Unit Total Population	Agric'l. Worker	Unit Total Population
1850	--	.05	--	.26	--	.08
1860	.76	.04	4.42	.23	1.17	.06
1870	.56	.03	3.00	.15	.68	.03
1880	.92	.03	4.03	.15	1.24	.05
1890	.86	.03	3.67	.11	1.31	.04
1900	1.08	.03	3.64	.09	1.19	.03
1910	.94	.02	3.38	.07	1.53	.03
1920	--	.01	--	.06	--	.03

NUMBERS of SPECIFIED CLASSES of LIVESTOCK
on Farms in the
United States, New England and Massachusetts.
(Censuses of 1850 - 1920)

Milch Cows

Year	United States		New England		Massachusetts		References
1850	6,385,094	1.00	603,219	1.00	130,099	1.00	
1860	8,585,735	1.34	679,930	1.12	144,492	1.11	
1870	8,935,332	1.40	648,593	1.06	114,771	.88	
1880	12,443,120	1.95	740,656	1.23	150,435	1.16	
1890	16,511,950	2.59	828,001	1.37	172,046	1.32	
Females 1900 #	17,135,633	2.68	893,473	1.47	184,562	1.42	24/56, 59
figure 2.9 ← 1910	20,625,432	17,125,[illegible] (3.03)	841,093	1.39	171,936	1.32	130/352
1920	19,675,297	3.08	842,928	1.37	149,331	1.15	23
1925	17 6[illegible]	2.7[illegible]	791,711	[illegible]	147,[illegible]	1.11	

Dairy cows 2 years and over.

Neat Cattle (Over 1 Year)

Year	United States	New England	Massachusetts	References
1850	17,778,907	1,469,023	262,994	
1860	25,620,019	1,572,776	279,914	
1870	23,820,608	1,353 157	219,052	
1880	35,925,511	1,503,452	261,051	
1890	51,363,572	1,411,352	256,123	
1900	52,403,828	1,316,544	242,323	24/53, 54
1910	53,997,327	1,168,523	226,345	130/361
1920	51,107,959	1,222,963	214,270	22

Poultry

Year	United States		New England		Massachusetts		References
1880	125,507,322	1.00	4,033,743	1.00	962,963	1.00	
1890	285,609,440	2.28	6,035,666	1.67	1,708,382	1.77	
1900	250,623,114	2.00	6,506,246	1.6[illegible]	1,650,695	1.74	24/74
1910	295,880,190	2.36	7 798,036	1.89	1,793,330	1.87	130/414
1920 #	359,537,127	2.86	5,883,507	1.4[illegible]	1,450,193	1.51	27
1925	407,211,249	3.26	8,1[illegible]	1.99	2,0[illegible]	2.11	

# Chickens only; other figures are for all poultry, chickens constituting practically all.

NUMBERS of SPECIFIED CLASSES of LIVESTOCK
on Farms in the
United States, New England and Massachusetts.
(Censuses of 1850 - 1920)

Sheep of Shearing Age
(1 Year or over)

Year	United States		New England		Massachusetts		References
1850	21,723,220	1.00	2,257,533	1.00	188,651	1.00	
1860	22,471,275	1.03	1,779,670	.79	114,329	.61	
1870	28,477,951	1.31	1,450,155	.64	78,560	.42	
1880	35,192,074	1.62	1,362,234	.60	67,979	.36	
1890	35,935,364	1.65	936,532	.41	51,458	.27	
1900	39,852,967	1.83	565,217	[illegible]	33,369	.18	24/66, 67
1910	39,644,046	1.82	306,443	.14	32,699	.12	13[illegible]/509
1920	26,107,701	1.20	191,691	.08	14,132	.07	22
1925	26,37[illegible],385	1.21	122,[illegible]7	.05	7,55[illegible]	.04	

Swine

Year	United States		New England		Massachusetts		References
1850	30,354,213	1.00	361,481	1.00	81,119	1.00	
1860	33,512,867	1.10	326,176	.90	73,948	.91	
1870	25,134,569	.83	241,030	.67	49,178	.61	
1880	47,681,700	1.57	362,133	1.[illegible]	80,123	.99	
1890	57,409,583	1.89	407,590	1.13	91,483	1.13	
1900	62,868,041	2.07	362,199	1.0[illegible]	73,925	.[illegible]	24/68
1910	58,185,676	1.92	396,642	1.10	103,015	1.27	13[illegible]/359
1920	59,346,409	1.96	383,752	1.06	104,192	1.28	22
1925	50,853,52[illegible]	1.68	193,240	.53	57,821	.71	

AGRICULTURAL LIVESTOCK ON FARMS.

Number of Certain Animals in the United States, New England and Massachusetts (Calculated from U. S. Census Reports, 1850 - 1919.)

UNITED STATES

Year	Sheep (of shearing age)		Poultry	
	Agricultural Worker	Unit Total Population	Agricultural Worker	Unit Total Population.
1860	6.93	.71	--	--
1870	4.81	.74	--	--
1880	4.59	.70	16.36	2.50
1890	4.20	.57	33.34	4.56
1900	3.82	.52	24.01	3.29
1910	3.19	.43	23.84	3.21
1920	--	--	--	--

NEW ENGLAND

Year	Sheep (of shearing age)		Poultry	
	Agricultural Worker	Unit Total Population	Agricultural Worker	Unit Total Population.
1860	5.99	.57	--	--
1870	4.61	.42	--	--
1880	4.51	.34	13.55	1.02
1890	3.08	.19	21.96	1.42
1900	1.96	.10	22.98	1.18
1910	1.09	.05	27.45	1.18
1920	--	.03	--	.79*

MASSACHUSETTS

Year	Sheep (of shearing age)		Poultry	
	Agricultural Worker	Unit Total Population	Agricultural Worker	Unit Total Population.
1860	1.81	.09	--	--
1870	1.08	.05	--	--
1880	1.05	.04	14.82	.54
1890	.74	.03	24.50	.76
1900	.51	.01	25.25	.60
1910	.34	.007	26.78	.53
1920	--	.004	--	.46*

* Chickens.

a decrease of 87% in each case; since 1910 New England and Massachusetts have each lost 37% of their sheep. The agricultural worker in the United States has less than half the sheep he had in 1860; in New England and Massachusetts farmers have less than one-fifth as many sheep as they had at that time. The loss means much more to New England than to Massachusetts since Massachusetts at best had not a sheep industry, as shown by each farm worker in New England having six sheep on the average; in Massachusetts it was less than one-third as many.

As to swine, the number of animals in the United States has slightly more than doubled only to lose slightly at 1910; New England's number has varied greatly, finally increasing almost 10%, with a small loss up to 1920; Massachusetts has, on the whole, bettered that record with an increase of 27% by 1910 and a slight gain since that time. There were in 1860 over ten animals per worker in the nation, and one and one-seventh per worker in New England and Massachusetts. In 1910 the former had only two-fifths as many as at first, while the latter had gained one-fourth.

The values of the farm property in the United States have climbed steadily, those of the nation out of all proportion to the older settled sections as new lands were developed. The average value per farm, then, is better used in forming an idea of the usual farm investment. The investment of 1850 for the United States was $2,738; for New England a bit less, $2,596; for Massachusetts decidedly more $3,579. The national average investment was practically $3,900 just before the Civil War, declining until the '80's then rising nicely to 1900 and rapidly thereafter, in 1910 having reached $6,444, two and a third times its starting point. New England values rose steadily, suffering only a slight loss in the '80's, then much more rapidly since 1900. Massachusetts values followed the same general course, with a mere check in plac

VALUE of ALL FARM PROPERTY
in the
United States, New England and Massachusetts.
Censuses of 1850 - 1920.

Year	United States	New England	Massachusetts	References
1850	$3,967,343,580	$435,154,325	$121,955,641	
1860	7,980,493,063	560,467,417	139,335,620	
1870	8,944,857,749	[illegible]	119,736,315	
1880	12,180,501,538	671,546,055	164,238,956	
1890	16,082,267,689	535,267,817	147,677,408	
1900	20,439,901,164	639,645,900	182,646,704	122/I 694
1910	40,991,449,090	867,240,457	226,474,955	130/76
1920	77,924,100,338	1,173,019,594	309,471,743	26

Average Farm Investment
(Value of all Farm Property divided by Number of Farms)

1850	$ 2,738	$ 2,556	$ 3,579
1860	3,904	3,047	3,929
1870	3,363	3,135	4,1[illegible]
1880	3,038	3,242	4,273
1890	3,523	3,631	4,296
1900	3,563	3,335	4,642
1910	6,444	4,523	6,155
1920	12,084	7,431	9,30[illegible]

Value of Farm Implements and Machinery

1850	$ 151,587,638	$ 12,937,290	$ 3,209,584	
1860	246,118,141	16,463,564	3,894,998	
1870	270,913,678	18,042,446	4,000,703	
1880	406,520,055	22,096,563	5,134,537	
1890	494,247,467	23,983,235	5,938,940	
1900	749,775,970	36,551,320	8,823,560	130/I 698
1910	1,265,149,783	50,799,856	11,563,304	132/79
1920	3,594,772,928	98,387,525	19,395,755	26

TOTAL and AVERAGE VALUES PER FARM
of FARM IMPLEMENTS, LAND and BUILDINGS and LIVESTOCK.
PERCENT of TOTAL VALUE of FARM PROPERTY REPRESENTED by EACH
in the
United States, New England and Massachusetts
(U.S. Census Data, 1850 - 1920)

Average Value of Farm Implements and Machinery per Farm

Year	United States	New England	Massachusetts	References
1850	105	77	94	
1860	120	90	109	
1870	102	100	151	
1880	101	107	134	
1890	108	125	173	
1900	133	190	234	20/1099
1910	199	269	313	130/91, 92
1920	557	690	605	26

Value of Farm Lands and Buildings

1850	$3,271,575,426	$373,343,543	$109,073,347	
1860	6,645,045,007	476,303,337	123,255,948	
1870	7,444,054,462	463,133,979	93,146,227	
1880	10,197,096,776	530.681,413	146,197,415	
1890	13,279.252,649	439,570,173	127,533,234	
1900	16,614,647,491	523,267,748	153,019,890	
1910	34,801,125,697	718,544,308	194,163,765	130/34, 35
1920	66,315,002,602	917,240,584	247,537,331	26

Average Value of Farm Lands and Buildings Per Farm

1850	$ 2,258	$ 2,221	$ 3,202	
1860	3,251	2,589	3,462	
1870	2,799	2,591	3,515	
1880	2,544	2,802	3,307	
1890	2,909	2,577	3,710	
1900	2,896	2,753	4,190	
1910	5,471	3,806	5,260	130/91, 92
1920	10,284	5,554	7,737	26

TOTAL and AVERAGE VALUES PER FARM of FARM IMPLEMENTS, LAND and BUILDINGS and LIVESTOCK; PERCENT of TOTAL VALUE of FARM PROPERTY REPRESENTED by EACH in the United States, New England and Massachusetts.

(U.S. Census Data, 1850 - 1920)

Value of Farm Livestock

Year	United States	New England	Massachusetts	References
1850	$ 544,180,516	$ 49,868,692	$ 9,647,710	
1860	1,089,329,915	68,695,016	12,737,744	
1870	1,229,339,609	80,177,526	13,639,383	
1880	1,576,834,707	69,063,077	12,957,004	
1890	2,308,767,573	71,914,351	14,200,178	
1900	3,075,477,703	74,826,332	15,798,464	
1910	4,925,173,610	97,896,323	20,741,366	135/34, 35
1920	8,013,324,808	163,163,435	33,524,157	26

Average Value of Farm Live Stock per Farm

Year	United States	New England	Massachusetts	References
1850	$ 376	$ 297	$ 283	
1860	533	373	358	
1870	462	444	515	
1880	393	333	337	
1890	506	379	413	
1900	536	390	419	
1910	774	519	562	136/91, 92
1920	1243	1,042	1,048	26

Percent of Total Value of Farm Property Represented by

	Land and Buildings			Implements & Machinery			Livestock			
Year	U.S.	N.E.	Mass.	U.S.	N.E.	Mass.	U.S.	N.E.	Mass.	References
1850	82.5	85.6	89.5	3.8	3.0	2.6	13.7	11.5	7.9	
1860	83.3	84.8	88.1	3.1	2.9	2.8	13.6	12.3	9.1	
1870	83.2	82.7	84.1	3.0	3.2	3.6	13.7	14.1	12.3	
1880	83.7	86.4	89.0	3.3	3.3	3.1	12.9	10.3	7.9	
1890	82.6	83.7	86.4	3.1	4.1	4.0	14.4	12.3	9.6	
1900	81.3	82.6	86.5	3.7	5.7	4.8	15.0	11.7	8.6	
1910	84.9	82.9	85.7	3.1	5.9	5.1	12.0	11.3	9.2	136/91.2
1920	85.1	78.5	82.4	4.6	7.6	6.6	10.3	13.9	11.0	

of actual loss. It is to be noted that national values have always been greater than New England's, but never equal to those of Massachusetts until 1910, then being nearly 5% greater. Figures of 1920 national farm values are not announced, but New England and Massachusetts values show rises of over 50%, part of which is doubtless due to recent inflation of prices generally.

Values of farm improvements, equipment and livestock have in general, followed similar courses, the percentage of each to the total farm property value changing relatively little. Land and buildings or improvements constitute at least 81% of the farm investment for the United States. The valuations are somewhat higher for New England and still higher for Massachusetts. Livestock values make up two-thirds of the remainder and are higher for the United States and New England than for Massachusetts, though in actual amount the Massachusetts farmer has a heavier investment than his New England neighbor outside the state. The percentage of investment in implements is small; that of the United States has always been between 3% and 4%; that of New England has risen from 3% to 5.8% in 1910 and 7.6% in 1920; that of Massachusetts, with her higher land investments has decidedly larger actual value, but somewhat smaller percentual value. Since 1910 New England and Massachusetts have both increased the percentages of investment in livestock and implements at the expense of that of land.

The acreage of improved farm lands per agricultural worker and per work animal has varied decidedly, the man always having more than the animal to care for except in Massachusetts where the difference of late years has not been marked and where in 1870 and 1910 the animal had more acres to work than his master, due to the more intensive use of man labor. The worker of the nation as a whole has averaged close to 40 acres each; the worker of New England averaging

ACREAGE of IMPROVED FARM LAND PER AGRICULTURAL WORKMAN and FARM ANIMAL in the United States, New England and Massachusetts

(Calculated from U.S. Census Reports, 1850 - 1920.)

Year	United States		New England		Massachusetts	
	Man	Animal	Man	Animal	Man	Animal
1850	- -	18.7	- -	[illegible]	- -	24.0
1860	50.3	19.2	41.1	25.2	31.1	[illegible]
1870	51.9	22.3	35.1	26.2	25.8	30.5
1880	37.1	25.1	43.0	28.5	22.6	25.7
1890	41.8	22.2	35.3	23.4	23.8	22.6
1900	39.7	26.7	28.3	22.2	19.4	18.0
1910	38.1	27.2	25.8	21.1	17.5	18.4
1920	47.3	29.2	27.9	20.9	18.2	18.6

41.1 acres first half of the period considered now averages scarce two-thirds of that amount, while the farm worker of Massachusetts cared for about three-quarters as much as the New Englander. The animal worker of the United States has almost continuously had more and more acreage to work - in this age of improvements in machinery; in New England and Massachusetts this was true up to the 80's, but since then there has been a decline, more marked in this state than New England, indicating more extensive use of man labor. The use of tractors has hardly begun to displace farm horses to any appreciable degree. The Fourteenth Census has asked the number of tractors and automobiles and motor trucks on farms for the first time and these figures may shed some light upon this subject.

To sum up, from 1860 to 1910 total populations have increased as has also percentage of agricultural population of the nation; but the latter merely holds its own in the New England states.

From 1850 to 1920 farms have increased or held their numbers correspondingly, but with a notable decrease in area of the whole and striking decrease of improved lands in the New England states. From 1850 to 1910 farm investments have increased with little change in relative values of the land and improvements, equipment and livestock.

Work animals per worker show nation-wide reduction in numbers from 1860 to 1910.

From 1850 to 1910 all productive animals increased in numbers in the nation except that from 1900 to 1910 sheep and swine lost slightly.

From 1850 to 1920 neat cattle show losses in numbers in New England, while milch cows do not: the sheep in New England and Massachusetts have dwindled to insignificance:

New England swine hold their own somewhat better, especially in

Massachusetts; in the nation their numbers have doubled.

Of all farm animals, poultry alone have gained everywhere in numbers per farm worker, except that swine in New England as a whole have also increased.

Agricultural Products Considered

Corn, wheat, oats, barley, rye, buckwheat, potatoes, hay, tobacco and cotton comprise nearly 90% of the acreage of all field crops grown in the United States (37) and their average value is close to that of the aggregate of all crops. To these leading field crops are here added dry peas and beans; white or Irish potatoes only are considered, omitting sweet potatoes, as these are not often grown in New England.

Apples, peaches and pears are the important orchard products of New England; maple sugar and syrup are tree products, also. Small fruits are represented by strawberries, the most largely produced of such fruits; by cranberries, New England's biggest berry crop; blackberries, currants, gooseberries and raspberries are grouped, being important only in the aggregate.

Animal products considered are milk, butter and cheese made on farms, eggs and wool.

Tables showing productions of each crop as reported at the various census periods are given; acreage or number of bearing trees of crops is given; average yields of field crops per acre are presented with the number of farms reporting them, and animal products and some of the small fruits. From these are calculated tables of production for some of the various factors of production and per capita of total (or consuming) population, namely, per unit of total population, per acre improved farm land, per work animal, per agricultural worker, per farm (average for all farms and average for farms reporting the product) and per animal producing the product or its basic raw material.-

The best measure of agricultural production is that of production per man. The others are often used for various purposes. The tables of production, acreage, yield and number of farms reporting need little comment; these derived from them will need more. The products will be considered singly, by groups and in the aggregate.

Statistics as to crop acreage are available from 1879 on; for number of farms reporting, from 1899 on only, not long enough to warrant conclusions from them. Many bits of data for 1919 and 1920 available for Massachusetts are not yet available for all New England or for the United States.

The small grains,- barley, buckwheat, oats, dry peas and beans, rye and wheat,- all show increase in production in the nation, while all show heavy loss in New England and Massachusetts. That great American grain crop, corn or maize shows similar changes in volume of yield but with a tendency to regain part of its loss in Massachusetts. Potatoes have diminished half in this state, but gained in New England as a whole and in the United States. Tobacco alone shows decided increase of crop everywhere. Acreages and number of farms reporting show somewhat corresponding changes.

FIELD CROPS

Barley

The nation's barley crop has doubled five times during the period studied while New England's gained more than double between 1849 and 1860, but since then has dropped back to almost its start; in Massachusetts a small corresponding gain was followed by a loss of 92% of the crop by 1909.

Barley production per capita in the United States has doubled four times, dwindling from the small amounts formerly grown in New

FIELD CROPS - BARLEY

Total Production
in the
United States, New England and Massachusetts
(Calculated from U. S. Census Reports, 1849 - 1920.)

Year	United States	New England	Massachusetts	References
1849	5,167,015	414,496	112,385	
1859	15,825,898	1,199,119	134,891	
1869	29,761,305	1,075,059	133,071	
1879	43,997,485	697,884	80,138	
1889	78,332,786	871,872	38,715	
1899	119,632,827	704,957	14,9[illegible]	24/14
1909	173,344,212	428,617	9,021	13 C/605
1919	122,024,773	343,641	11,8[illegible]	20

ACREAGE

Year	United States	New England	Massachusetts	References
1849	- -	- -	- -	
1859	- -	- -	- -	
1869	- -	- -	- -	
1879	1,997,727	32,580	3,171	
1889	3,220,834	35,754	1,785	
1899	4,470,196	25,554	638	
1909	7,698,706	16,242	349	13 C/606
1919	6,472,888	14,767	-509	

AVerage Yield in Bushels Per Acre.

Year	United States	New England	Massachusetts	References
1849	- -	- -	- -	
1859	- -	- -	- -	
1869	- -	- -	- -	
1879	22.0	23.6	25.3	
1889	24.3	24.4	31.7	
1899	26.8	29.9	23.5	
1909	22.5	26.4	25.8	13 C/608
1919	[illegible].3	23.3	23.2	

Number of Farms Reporting the Crop.

Year	United States	New England	Massachusetts	References
1900	272,913	11,214	298	
1910	383,197	6,593	197	13 C/606
1920	- -	~~5,575~~ 5,722*	260	20

* Connecticut data not included because not yet published. Fewer than 100 farms reported the crop in 1899 and 1909 in that state.

FIELD CROPS - BARLEY

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1850 - 1920.)

UNITED STATES

Year	Production Per Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agricultural Worker (bu)	Crop Acre (bu) (bu)	Farm Reporting Crop (bu)
1849	.22	.046	3.83	.86	--	--	--
1859	.50	.10	7.74	1.36	4.33	--	--
1869	.77	.10	11.19	3.52	5.93	--	--
1879	.83	.15	10.97	3.83	5.79	22.0	--
1889	1.25	.22	17.16	4.87	9.14	24.3	--
1899	1.57	.29	20.85	7.72	11.46	26.3	438.4
1909	1.83	.37	27.25	9.94	13.96	22.5	452.4
1919	--	--	---	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agricultural Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	.15	.02	2.47	.32	--	--	--
1859	.33	.05	6.52	2.23	4.05	--	--
1869	.31	.05	5.95	2.35	3.14	--	--
1879	.17	.05	3.37	1.51	2.31	23.6	--
1889	.19	.08	4.59	1.82	2.86	24.4	--
1899	.13	.09	3.67	1.93	2.45	29.9	62.9
1909	.07	.06	2.27	1.25	1.53	26.4	65
1919	--	--	---	--	--	--	--

MASSACHUSETTS

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agricultural Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	.11	.03	3.30	1.27	--	--	--
1859	.11	.05	6.52	2.23	4.03	--	--
1869	.09	.05	5.02	2.03	1.36	--	--
1879	.05	.04	2.09	1.23	1.24	25.3	--
1889	.02	.02	1.13	.53	.36	21.7	--
1899	.005	.01	.40	.21	.23	23.5	50.
1909	.003	.003	.24	.14	.13	25.3	45.8
1919	.003	.003	.37	--	--	--	45.5

England and Massachusetts to practically nothing. The same is true per agricultural worker.

Buckwheat

The buckwheat crop doubled in the United States, lost and then gained. New England's crop gained 65% from 1849 to 1869, but is now dropping below its starting point; Massachusetts, since 1869, has lost four-fifths of hers; New England's average yield per acre, 21 bushels, is the best considered; that of Massachusetts is nearly 20.2 bushels.

The production of buckwheat per worker has held up far better in New England than elsewhere; per farm reporting the crop it tends to remain unchanged here while gaining in the United States.

Indian Corn or Maize

The nation's greatest grain crop, corn, is a big one for Massachusetts although at times oats yield more heavily. Up to 1899 the crop declined in New England to 77% and in Massachusetts to 64% its one-time quantity, then gaining decidedly to 1910, only to lose again up to 1930. The New England and Massachusett yield per acre of corn reaches over 40 bushels per acre, 50% larger than the nation's.

The national yield of corn per farm reporting the crop is nearly 550 bushels; Massachusetts farms grow a quarter as much, New England farms one-fifth. The yields per worker show greater differences - usually 225 bushels for the United States, and from 15 to 30 only for New England and Massachusetts.

Hay and Forage

Hay and forage consist almost wholly of hay and the few root crops and small amount of corn fodder reported are nearly negligible for purposes of this study. The crop has multiplied itself seven fold in the United States; it has gained 54% in New England and 34% in

FIELD CROPS - BUCKWHEAT

Total Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1849 - 1920.)

Total Production (in Bushels)

Year	United States	New England	Massachusetts	References
1849	8,956,912	716,044	105,895	
1859	17,571,818	980,612	143,602	
1869	9,821,721	1,189,413	58,049	
1879	11,817,327	1,039,343	67,117	
1889	12,110,349	880,438	31,300	
1899	11,233,515	807,236	36,034	24/15-16
1909	14,849,332	602,715	32,926	13 C/615
1919	12,690,384	456,762	23,238	20

Acreage

Year	United States	New England	Massachusetts	References
1879	848,389	59,372	5,617	
1889	837,164	45,161	2,473	
1899	807,060	42,767	2,268	
1909	878,048	28,725	1,630	13 C/616
1919	742,627	22,462	1,304	20

Average Yield (in Bushels) per Acre.

Year	United States	New England	Massachusetts	References
1879	13.8	17.5	11.9	
1889	14.5	19.6	12.7	
1899	13.9	18.8	15.9	
1909	16.9	21.0	20.2	13 C/618
1919	17.1	20.6	17.8	

Number of Farms Reporting the Crop.

Year	United States	New England	Massachusetts	References
1899	100,450	16,533	1,038	
1909	197,789	13,838	867	13 C/616
1919	- -	9,076*	679	20

~~* Connecticut report not yet published and included. 1334 farms there reported the crop in 1899; 1649 in 1909.~~

FIELD CROPS - BUCKWHEAT

Average Production
in the
United States, New England and Massachusetts.
(Calculated from U.S. Census Reports, 1850 - 1920.)

UNITED STATES

Year	Production Per Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	.39	.08	6.18	1.43	--	--	--
1859	.56	.11	8.57	2.07	5.42	--	--
1869	.25	.05	3.69	1.16	1.66	--	--
1879	.24	.04	2.96	1.04	1.54	13.9	--
1889	.19	.03	2.65	.75	1.41	14.5	--
1899	.15	.03	1.96	.72	1.08	13.9	60.7
1909	.16	.03	2.33	.55	1.20	16.9	75.1
1919	--	--	--	--	--	--	--

NEW ENGLAND

Year	Production Per Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	.26	.06	6.27	1.42	--	--	--
1859	.32	.08	5.39	1.53	3.35	--	--
1869	.34	.10	6.55	2.60	3.77	--	--
1879	.26	.08	5.05	2.25	3.44	17.5	--
1889	.12	.08	4.09	1.35	2.92	19.6	--
1899	.14	.10	4.21	2.21	2.81	18.9	46.5
1909	.09	.08	3.10	1.75	2.35	21.9	49.0
1919	--	--	--	--	--	--	--

MASSACHUSETTS

Year	Production Per Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	.11	.05	3.11	1.19	--	--	--
1859	.10	.06	3.46	1.43	1.05	--	--
1869	.04	.03	2.19	.39	.60	--	--
1879	.04	.03	1.59	.90	1.03	11.9	--
1889	.01	.02	.91	.43	.45	12.7	--
1899	.01	.03	.44	.50	.34	15.9	34.7
1909	.009	.03	.69	.52	.49	20.9	35.6
1919	.006	.005	.75	--	--	--	34.2

FIELD CROPS - INDIAN CORN OR MAIZE

Total Production
in the
United States, New England and Massachusetts
(Calculated from U. S. Census Reports, 1849 - 1919.)

Total Production in Bushels.

Year	United States	New England	Massachusetts	References
1849	592,071,104	10,175,856	2,345,490	
1859	838,792,742	9,164,505	2,157,063	
1869	760,944,549	7,347,666	1,397,807	
1879	1,754,591,676	8,376,308	1,797,768	
1889	2,122,327,547	4,596,046	1,330,101	
1899	2,666,322,370	7,807,920	1,539,980	24/17
1909	2,552,189,630	8,238,394	2,029,381	13 C/581
1919	2,345,832,507	5,597,723	1,515,933	20

Acreage.

Year	United States	New England	Massachusetts	References
1879	62,368,504	243,102	52,555	
1889	72,087,752	158,701	34,010	
1899	94,913,673	198,377	39,131	
1909	98,382,665	182,065	41,755	13 C/582
1919	87,771,600	117,347	28,953	20

Average Yield (in Bushels) per Acre.

Year	United States	New England	Massachusetts	References
1879	28.1	34.5	34.2	
1889	29.4	38.6	39.1	
1899	28.1	39.4	39.4	
1909	25.9	45.2	48.6	13 C/582
1919	26.8	47.7	52.4	20

Number of Farms Reporting the Crop.

Year	United States	New England	Massachusetts	References
1899	4,697,498	80,109	14,552	
1909	4,813,175	67,712	14,755	13 C/582
1919	- -	45,616 ~~[illegible]~~*	10,937	20

~~* Connecticut report not yet published~~ ~~end included~~~~. Just over 16,000 farms~~ state ~~there~~ ~~reported the crop in 1899 and 1909.~~

FIELD CROPS - INDIAN CORN or MAIZE
Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1850 - 1920.)

UNITED STATES

Year	Production Per Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agricultural Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	25.53	5.24	408.59	98.07	--	--	--
1859	26.68	5.14	410.35	98.63	258.85	--	--
1869	19.73	4.03	286.04	85.90	128.48	--	--
1879	34.93	6.16	437.67	154.57	225.75	28.1	--
1889	33.89	5.93	464.95	131.93	247.70	29.4	--
1899	35.04	6.43	464.73	171.95	255.44	28.1	567.6
1909	27.69	5.37	401.19	146.42	205.66	25.9	580.3
1919	--	--	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agricultural Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	3.73	.91	60.70	19.99	--	--	--
1859	2.92	.75	49.82	17.39	35.83	--	--
1869	2.11	.61	40.67	16.04	25.34	--	--
1879	2.09	.64	40.42	18.14	27.75	34.5	--
1889	.98	.43	24.19	9.57	15.10	38.6	--
1899	1.37	.96	40.68	21.39	27.16	39.4	97.5
1909	1.36	1.14	43.64	23.96	29.34	45.2	121.7
1919	.76	.92	37.75	--	--	--	--

MASSACHUSETTS

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agricultural Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	2.36	1.10	65.35	26.41	--	--	--
1859	1.75	1.01	60.53	25.08	34.00	--	--
1869	.96	.81	52.75	21.35	19.30	--	--
1879	1.01	.84	46.80	14.23	27.67	34.2	--
1889	.59	.80	38.69	18.10	15.08	39.1	105.9
1899	..55	1.10	40.33	21.41	25.14	39.4	137.6
1909	.60	1.74	54.97	32.13	30.22	48.6	138.7
1919	.39	1.67	47.37	--	--	--	--

Massachusetts, this last in spite of the loss of 27% of the acreage; the gain was made by increased yield of 55% per crop acre in both New England and Massachusetts.

The yields per farm in all cases are closely alike - around 35 tons, with Massachusetts averaging slightly lower than the rest of the country. The New England worker has always produced more than 13 tons, decidedly more than in Massachusetts and frequently twice or thrice as much as in the United States. Without doubt the explanation of this low yield is that much of the feed in sections of the west was grazed down, whereas in this part of the country it must be cut and stored for use; but in 1910 it is to be noted the worker of the nation as a whole produced 13.17 tons, more than the Massachusetts man and four-fifths as much as the New Englander who produced 16.6 tons, which probably indicates a decided change in agricultural methods.

Oats

New England holds to her oat crop as steadily as to any grain crop, though this is shrinking. The 1909 Massachusetts crop had fallen off 75% from the high figure of 1859, which was 1,180,000 bushels. The loss in acreage followed closely. The Massachusetts farm reporting the crop produces about one-fourth, the New England farm about one-third as much as the average for the United States. Massachusetts and New England produce the same average amount, 32 bushels of oats per crop acre; the average for the nation is 2 less.

White or Irish Potatoes

The national white potato crop has grown even faster than the population, having increased six times its size from 1849 to 1909 while population quadrupled. In New England and Massachusetts much fluctuation in yield has taken place, probably due in part to poor crop years. But

FIELD CROPS - HAY AND FORAGE.

Total Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1849 - 1919.)

Total Production in Tons.

Year	United States	New England	Massachusetts	References
1849	13,838,642	3,463,652	651,807	
1859	19,083,896	3,869,200	665,331	
1869	27,316,048	3,936,590	597,455	
1879	35,150,711	4,079,545	684,679	
1889	66,831,480	4,565,014	793,167	11 C/90
1899	7 9,251,562	4,576,865	848,950	
1909**	97,453,735	4,659,906	831,955	13 C/640
1919	146,343,241	5,308,632	871,573	20

Acreage.

Year	United States	New England	Massachusetts	References
1879	30,631,054	4,254,246	639,498	
1889	52,948,787	4,180,355	627,385	
1899	61,691,069	4,050,025	610,023	
1909**	72,280,776	3,797,598	519,503	13 C/641
1919	96,121,228	3,573,719	466,330	20

Average Yield in Tons Per Acre.

Year	United States	New England	Massachusetts	References
1879	1.15	0.96	1.07	
1889	1.26	1.09	1.26	
1899	1.28	1.13	1.39	
1909**	1.35	1.23	1.60	13 C/643
1919	1.52	1.49	1.66	20

Number of Farms Reporting the Crops.

Year	United States	New England	Massachusetts	References
1899	3,583,747	184,203	34,278	
1909**	3,403,206	177,167	33,569	13 C/641
1920	- -	~~[illegible]~~ 145,035*	26,978	20

~~* Connecticut report not yet published and included. In 1899, 25,503 farms there reported the crops; in 1909, 23,463.~~

** Includes root crops used for forage, not materially affecting the totals given.

FIELD CROPS - HAY and FORAGE

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1850 - 1920.)

U N I T E D S T A T E S

Year	Unit Total Population (Tons)	Acre Improved Farm Land (Tons)	Production Per Farm (Tons)	Work Animal (Tons)	Agric'l Worker (Tons)	Crop Acre (Tons)	Farm Reporting Crop (Tons)
1849	.50	.12	9.55	2.20	--	--	--
1859	.61	.12	9.34	2.24	5.89	--	--
1869	.71	.14	10.27	3.23	4.61	--	--
1879	.76	.12	9.77	3.10	4.53	1.15	--
1889	1.07	.19	14.64	4.15	7.80	1.26	--
1899	1.04	.19	15.61	5.11	7.59	1.25	22.1
1909	1.06	.21	15.32	6.59	13.17	1.35	25.6
1919	--	--	--	--	--	--	--

N E W E N G L A N D

Year	Unit Total Population (Tons)	Acre Improved Farm Land (Tons)	Production Per Farm (Tons)	Work Animal (Tons)	Agric'l Worker (Tons)	Crop Acre (Tons)	Farm Reporting Crop (Tons)
1849	1.27	.31	20.66	6.35	--	--	--
1859	1.23	.316	21.03	7.34	13.01	--	--
1869	1.13	.33	21.70	8.59	12.50	--	--
1879	1.02	.31	19.69	8.64	13.52	0.96	--
1889	1.50	.43	24.03	9.50	14.09	1.06	--
1899	.82	.56	23.35	12.54	15.92	1.13	23.5
1909	.71	.63	24.63	13.55	16.69	1.23	26.3
1919	.72	.87	33.91	--	--	--	--

M A S S A C H U S E T T S

Year	Unit Total Population (Tons)	Acre Improved Farm Land (Tons)	Production Per Farm (Tons)	Work Animal (Tons)	Agric'l Worker (Tons)	Crop Acre (Tons)	Farm Reporting Crop (Tons)
1849	.67	.305	19.15	7.34	--	--	--
1859	.54	.31	18.69	7.73	10.52	--	--
1869	.41	.34	22.65	9.13	9.21	--	--
1879	.38	.32	17.33	9.23	10.54	1.07	-
1889	.35	.48	23.07	10.80	11.33	1.26	--
1899	.30	.66	23.51	11.30	12.75	1.39	24.3
1909	.25	.71	23.54	13.17	13.59	1.60	24.8
1919	.23	.96	27.24	--	--	--	32.3

FIELD CROPS - OATS.

Total Production
in the

United States, New England, and Massachusetts
(Calculated from U.S. Census Reports, 1849 - 1919.)

Total Production in Bushels.

Year	United States	New England	Massachusetts	References
1849	146,584,179	8,101,268	1,165,146	
1859	172,643,185	10,895,185	1,180,075	
1869	282,107,185	9,169,504	797,664	
1879	407,858,999	8,839,681	643,159	
1889	809,250,666	8,960,323	383,819	
1899	943,387,375	7,643,175	240,920	24/21-2
1909	1,007,142,980	7,350,601	268,500	13-C/600
1919	1,055,182,798	7,099,721	287,881	20

Acreage.

1879	16,144,593	270,743	20,659	
1889	28,320,677	292,219	14,331	
1899	29,539,698	212,737	6,702	
1909	35,159,441	223,221	7,927	13-C/601
1919	37,991,002	236,113	9,533	20

Average Yield in Bushels per Acre.

1879	25.3	32.6	31.2	
1889	28.6	30.7	27.1	
1899	31.9	31.9	36.0	
1909	28.6	32.9	33.9	13-C/603
1919	27.8	30.0	30.2	20

Number of Farms Reporting the Crop

1899	2,114,559	51,775	3,179	
1909	2,174,006	43,579	2,181	13 C/601
1919	- -	46,796*	2,214	20

*

~~* Connecticut report not yet published and included. In 1899, 3,223 farms there reported the crop; in 1909, 3,192.~~

FIELD CROPS - Oats

Average Production
in the
United States, New England and Massachusetts.
(Calculated from U.S. Census Reports 1850 - 1920.)

UNITED STATES

Year	Production Per						
	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	6.32	1.30	101.16	24.28	--	--	--
1859	5.49	1.06	94.46	30.30	55.37	--	--
1869	7.32	1.49	106.06	33.33	57.63	--	--
1879	8.13	1.43	101.74	35.93	56.17	25.3	--
1889	12.92	2.26	177.29	50.39	105.93	26.6	--
1899	12.40	2.23	164.45	60.34	90.33	31.9	446.1
1909	10.93	2.13	158.32	57.73	85.99	25.0	403.3
1919	--	--	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	2.97	.73	43.32	16.02	--	--	--
1859	3.48	.89	59.23	20.69	30.65	--	--
1869	2.63	.76	50.76	20.02	28.13	--	--
1879	2.20	.67	42.66	19.15	25.29	33.6	--
1889	1.91	.83	47.17	18.66	29.43	35.7	--
1899	1.37	.94	59.33	20.94	26.59	31.9	147.6
1909	1.12	1.01	55.93	21.36	26.18	32.5	163.7
1919	.97	1.16	45.35	--	--	--	--

MASSACHUSETTS

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	1.17	.55	34.20	13.11	--	--	--
1859	.96	.55	35.15	15.72	36.65	--	--
1869	.55	.46	30.10	12.13	10.41	--	--
1879	.36	.30	16.30	6.69	9.93	31.2	--
1889	.17	.23	11.31	5.29	5.53	27.1	--
1899	.09	.19	6.39	3.35	3.32	36.0	110.6
1909	.08	.23	7.27	4.25	4.00	33.9	123.1
1919	.07	.32	9.00	--	--	30.2	130.0

from 1889, which seems to have been such a poor year, to 1909, New England's crop trebled. The Massachusetts crop tends to drop slowly in amount, after remaining fairly steady from 1849 to 1899.

The New England average yield per crop acre has always been the largest, usually well over a hundred bushels, running in 1909 to 176.9; that of Massachusetts is about a hundred, 120½ being the highest; the nation as a whole produces abbut 94 bushels. The New Englander leads in production per man, growing about 70 bushels as compared with the Massachusetts figure of somewhat over 40 (seldom 50) and the nation's 33.

Dry Peas and Beans

Dry peas and beans include cowpeas which are not grown in New England and are small in amount for the United States. The crops are comparatively small at best, but are in New England, at least, much more important as a food crop than mere bulk of production may indicate.

Massachusetts yields have shrunk from 45,346 bushels in 1859 to about one-ninth that in 1909; New England's from 475,831 to less than a third; the nation's have since 1849 practically doubled from 9,219,901 to 18, 330,554 bushels.

Production per worker in Massachusetts and New England has diminished as has the total yield but in the United States has varied considerably, on the whole decreasing over tno-thirds.

Rye

The rye crop of the United States increased 100%, from 14,188,81 bushels in 1849 to 29,520,457 bushels in 1910; the New England and Massachusetts crops have shrunk 90% in the same period from 1,570,589 and 431,021 bushels respectively to 140,392 and 46,261 bushels. Average yield per crop acre has increased over 50% in New England, nearly 100% in Massachusetts, about 25% in the United States. Production per farm

FIELD CROPS - WHITE or IRISH POTATOES

Average Production
in the
United States, New England and Massachusetts.
(Calculated from U.S. Census Reports, 1850 - 1920.)

U N I T E D S T A T E S

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Production per Farm (bu)	Farm Animal (bu)	Agric'l Worker (bu)	Crop (bu)	Farm Acre Reporting Crop (bu)
1849	2.84	.58	45.41	10.90	--	--	--
1859	3.53	.68	54.38	13.07	34.30	--	--
1869	3.72	.76	55.89	16.93	24.80	--	--
1879	3.38	.60	42.27	14.93	22.88	#	--
1889	3.47	.61	47.65	13.52	25.40	83.6	--
1899	3.59	.66	47.64	17.63	26.13	93.0	96.4
1909	4.22	.82	61.18	22.33	31.35	106.1	122.4
1919	--	--	--	--	--	--	--

N E W E N G L A N D

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Production per Farm (bu)	Farm Animal (bu)	Agric'l Worker (bu)	Crop (bu)	Farm Acre Reporting Crop (bu)
1849	7.19	1.76	117.02	38.80	--	--	--
1859	6.30	1.75	116.03	40.58	71.79	--	--
1869	6.36	1.99	123.46	52.14	76.01	--	--
1879	5.50	1.68	106.44	47.73	73.03	109.1	--
1889	3.89	1.27	71.54	35.30	44.64	85.4	--
1899	4.20	2.33	182.29	64.23	81.63	130.3	149.6
1909	5.29	5.63	218.46	119.96	146.31	176.9	176.2
1919	4.45	5.35	203.87	--	--	--	--

M A S S A C H U S E T T S

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Production per Farm (bu)	Farm Animal (bu)	Agric'l Worker (bu)	Crop (bu)	Farm Acre Reporting Crop (bu)
1849	3.61	1.68	105.24	40.36	--	--	--
1859	2.60	1.49	83.94	37.23	50.61	--	--
1869	2.03	1.74	114.17	46.21	41.55	--	--
1879	1.72	1.44	79.95	41.33	47.26	93.9	--
1889	.83	1.13	57.01	26.67	33.14	73.8	--
1899	1.20	2.59	83.73	46.52	56.29	121.6	121.5
1909	.83	2.53	79.80	46.65	43.37	120.5	118.0
1919	.49	2.07	93.93	--	--	87.5	92.7

Reports of acreage and production being only partial for some sections of the country, a figure for national average of production per acre is misleading, so not given.

FIELD CROPS - WHITE (OR IRISH) POTATOES.

Total Production
in the
United States, New England, and Massachusetts
(Calculated from U.S. Census Reports, 1849 - 1919.

Total Production in Bushels.

Year	United States	New England	Massachusetts	References.
1849	65,797,896	19,618,111	3,535,384	
1859	111,148,867	21,343,616	3,201,901	
1869	143,337,473	23,928,604	3,025,446	
1879	169,458,539	22,058,069	3,070,389	
1889	217,546,362	13,591,099	1,959,727	11 C/91
1899	273,318,267	23,466,222	3,346,590	
1909	389,194,965	41,245,977	2,946,178	13 C/654
1919	290,427,580	32,702,076	1,885,655	20

Acreage.

Year	United States	New England	Massachusetts	References.
1879	- - **	202,099	31,054	11 C/91
1889	2,600,750	159,203	26,873	
1899	2,938,778	180,025	27,521	
1909	3,668,855	233,095	24,459	13 C/654
1919	3,251,703	191,901	21,558	20

Yields in Bushels Per Acre.

Year	United States	New England	Massachusetts	References.
1879	- - **	109.1	98.9	
1889	83.6	85.4	72.9	
1899	93.0	130.3	121.8	
1909	106.1	176.9	120.5	13 C/656
1919	- - 89.4	171.2	87.5	20

Number of Farms Reporting the Crop.

Year	United States	New England	Massachusetts	References.
1899	2,836,105	156,855	27,470	
1909	3,179,907	149,312	24,757	13 C/654
1919	- -	120,231 ~~[illegible]~~ *	22,813	20

* ~~Connecticut report not yet published and included. In 1899 22,142 farms there reported the crop; in 1909, 21,486.~~

** The 1880 census gave acreage in selected states only; no national figures are available (11 C/91)

FIELD CROPS - DRY PEAS AND BEANS (INCLUDING COWPEAS)

Total Production
in the
United States, New England and Massachusetts.
(Calculated from U.S. Census Reports, 1849 - 1919.)

Total Production in Bushels.

Year	United States	New England	Massachusetts	References.
1849	9,219,901	450,891	43,709	
1859	15,061,995	475,631	45,246	
1869	5,746,027	465,767	24,690	
1879	9,590,027	417,023	23,278	
1889	9,378,903	283,192	14,228	
1899	14,504,068	260,279	10,193	34/34
1909**	18,380,554	152,895	5,459	13 C/625; 13 C/627
1919	- -	- -	10,902	

** This year's production is the sum of that of peas and beans given in the tables to which reference is given.

Number of Farms Reporting Beans.

1899	245,016	38,429	1,609	
1909	185,934	26,234	1,252	13 C/624; 13 C/626
1919	- -	16,383*	1,166	20

* Connecticut report not yet published and included. In 1899 and 1909 the State had just over 700 farms reporting the crop.

Number of Farms Reporting Pease.

1899	417,864	4,215	125	
1909	261,231	1,488	58	13 C/624; 13 C/626
1919	- -	528*	37	20

* Connecticut report not yet published ~~and included~~. In 1900, 35 farms ~~there~~ in that state reported the crop; in 1909, only 18.

FIELD CROPS - DRY PEAS and BEANS

Average Production
in the
United States, New England and Massachusetts.
(Calculated from U.S. Census Reports, 1850 - 1920.)

U N I T E D S T A T E S

Year	Production per				
	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)
1849	.40	.08	6.36	1.53	--
1859	.43	.09	7.34	1.77	4.65
1869	.15	.03	2.16	.63	.97
1879	.19	.03	2.39	.64	1.25
1889	.15	.03	2.05	.56	1.05
1899	.19	.04	2.53	.94	1.39
1909	.20	.04	2.89	1.05	1.48
1919	--	--	--	--	--

N E W E N G L A N D

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)
1849	.17	.04	2.69	.99	--
1859	.15	.04	2.59	.90	1.60
1869	.13	.04	2.53	1.02	1.43
1879	.10	.03	2.01	.90	1.38
1889	.06	.03	1.49	.59	.93
1899	.05	.03	1.36	.71	.91
1909	.02	.02	.81	.44	.54
1919	--	--	--	--	--

M A S S A C H U S E T T S

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)
1849	.04	.02	1.23	.49	--
1859	.04	.02	1.27	.53	.72
1869	.02	.01	.94	.36	.34
1879	.01	.01	.61	.31	.36
1889	.006	.009	.41	.19	.20
1899	.004	.003	.27	.14	.15
1909	.002	.005	.15	.09	.08
1919	.004	.01	.34	--	--

FIELD CROPS - RYE.

Total Production in the United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1849 - 1919.)

Total Production in Bushels

Year	United States	New England	Massachusetts	References.
1849	14,188,813	1,570,589	481,021	24/25-6
1859	21,101,380	1,435,851	388,085	-
1869	16,918,795	703,379	239,327	
1879	19,831,595	730,215	213,716	
1889	28,421,398	403,525	117,091	
1899	25,570,350	317,964	80,294	
1909	29,520,457	230,458	59,183	13 C/610
1919	75,992,223	149,392	46,261	20

Acreage.

Year	United States	New England	Massachusetts	References.
1879	1,842,233	64,428	21,666	
1889	2,171,604	32,770	10,665	
1899	2,054,292	18,655	4,557	
1909	2,195,561	13,221	3,476	13 C/611
1919	7,679,005	10,282	3,062	20

Average Yield in Bushels Per acre.

Year	United States	New England	Massachusetts	References.
1879	10.8	11.3	9.9	
1889	13.1	12.3	11.0	
1899	12.4	17.0	13.2	
1909	13.4	17.4	17.0	13 C/613
1919	--	--	23.	20

Number of Farms Reporting the Crop.

Year	United States	New England	Massachusetts	References.
1899	235,108	7,612	1,662	
1909	275,796	5,674	1,304	13 C/611
1919	- -	- -	1,192	20

FIELD CROPS - RYE

Average Production in the United States, New England and Massachusetts.

(Calculated from U.S. Census Reports, 1850 - 1920.)

UNITED STATES

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Production Per Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	.61	.13	9.79	3.36	--	--	--
1859	.67	.13	10.30	3.48	6.51	--	--
1869	.44	.09	6.36	2.00	2.60	--	--
1879	.40	.07	4.95	1.75	2.59	10.8	--
1889	.45	.08	6.23	1.77	3.32	13.1	--
1899	.34	.06	4.46	1.65	2.50	12.4	36.7
1909	.32	.06	4.64	1.69	2.36	13.4	107.0
1919	--	--	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Production Per Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	.56	.14	9.37	3.11	--	--	--
1859	.45	.12	7.75	2.71	4.30	--	--
1869	.20	.06	3.89	1.54	2.25	--	--
1879	.13	.06	3.32	1.53	1.33	11.3	--
1889	.09	.04	2.12	.84	1.33	12.3	--
1899	.06	.04	1.66	.37	1.11	17.0	41.8
1909	.02	.02	.95	--	--	17.4	40.6
1919	--	--	--	--	--	--	--

MASSACHUSETTS

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Production Per Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Crop Acre (bu)	Farm Reporting Crop (bu)
1849	.43	.23	14.12	5.42	--	--	--
1859	.32	.18	10.90	4.51	6.13	--	--
1869	.16	.14	9.03	3.65	5.29	--	--
1879	.10	.15	5.54	2.83	3.30	[illegible]	--
1889	.05	.07	3.40	1.59	1.66	11.0	--
1899	.02	.05	1.59	.84	.91	15.2	38.3
1909	.02	.05	1.60	.94	.83	17.0	40.4
1919	.01	.05	1.45	--	--	--	33.3

reporting the crop in New England and Massachusetts is about 40 bushels, in the United States about 95; per agricultural worker in the United States it has dropped from 6.5 bushels in 1859 to 2.38 in 1909 - about two-thirds; in New England from 4.8 to 1.11 bushels, over 75%; in Massachusetts from 6.13 to .88 bushels, over 85%. The number of farms reporting the crop has decreased slightly in the United States, and in New England and Massachusetts 25% from 1890 to 1910.

Wheat.

The United States wheat crop grew from 100,000,000 bushels in 1849 and 173,000,000 bushels in 1859 to 683,000,000 bushels in 1909. The per capita yield nearly doubled in that period, but the average yield per agricultural worker in 1909 was only 1½ bushels above that of 1859; in 1899 it had reached a maximum of 63.09 bushels. The New England crop of 1849 was practically 1% of the national crop, while the Massachusetts crop was only three-hundredths of one percent of the crop of the United States. In 1859 Massachusetts reached her high mark of 119,783 bushels and in 1879 the crop in all New England reached the highest point, 1,227,037 bushels - so it is easy to see that this part of the country never had a large crop to lose. But, such as it was, New England's crop in 1909 was only 9% of her largest crop, and the Massachusetts crop was barely 2% of her largest production, only 2,404 bushels. In fact, the crop of New England has been so small since 1910 that the U.S. Department of Agriculture gives statistics for it in Maine and Vermont alone. The New England production of wheat per worker has equalled four bushels only once, in the big crop of 1879, straightway dropping abruptly to two-fifths of a bushel in 1909. The Massachusetts worker in 1859 produced nearly two bushels, in 1889 and 1909 two pounds.

FIELD CROPS - WHEAT

Total Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1849 - 1919.

Total Production in Bushels.

Year	United States	New England	Massachusetts	References
1849	100,485,944	1,090,894	31,211	
1859	173,104,924	1,083,193	119,783	
1869	287,745,626	1,000,695	34,648	
1879	459,483,137	1,337,037	15,768	
1889	468,373,968	289,134	1,813	
1899	658,534,252	166,125	1,750	24/27
1909	683,379,259	114,998	2,404	13 C/591
1919	945,403,215	544,786	35,353	20

Acreage.

Year	United States	New England	Massachusetts	References
1879	35,430,333	79,003	963	
1889	33,579,514	15,106	112	
1899	52,588,574	9,237	95	
1909	44,262,592	4,893	102	13 C/591
1919	73,099,421	31,864	1,876	20

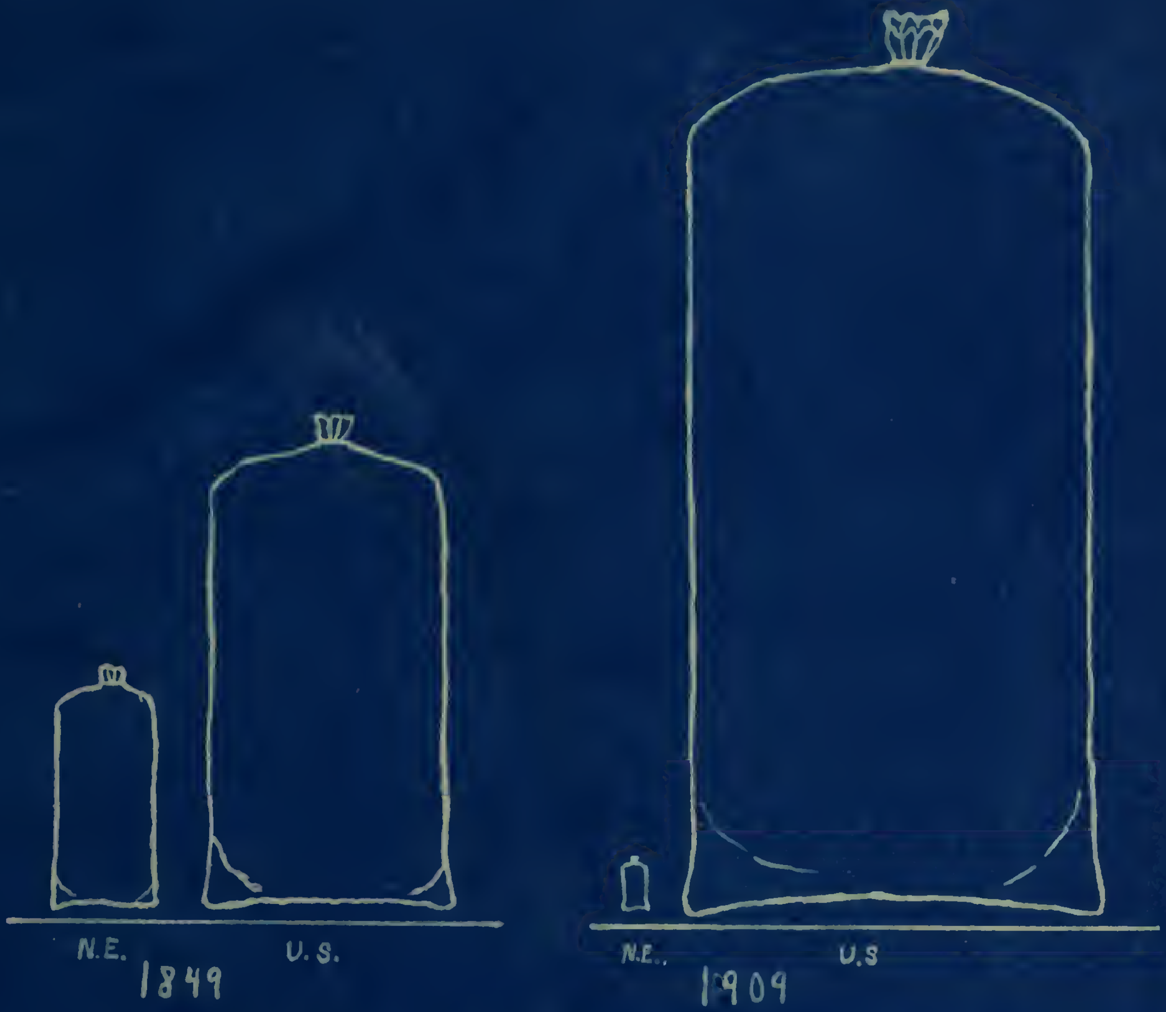
Yield in Bushels Per Acre.

Year	United States	New England	Massachusetts	References
1879	13.0	15.5	16.4	
1889	13.9	19.1	16.2	
1899	12.5	18.0	16.4	
1909	15.4	23.5	22.1	13 C/593
1919	12.9	17.1	17.7	20

Number of Farms Reporting Crop.

Year	United States	New England	Massachusetts	References
1899	2,053,912	4,585	48	
1909	1,458,667	2,236	81	13 C/591
1919.	- -	13,381 ~~12,216~~*	703	20

~~* Connecticut report not yet published and included. The State probably had over 1,000 growing wheat in 1919.~~



1,090,894 Bu. — New England — 114,998 Bu.
100,485,944 Bu. — United States — 683,379,259 Bu.

THE WHEAT CROPS

In the United States and New England, 1849 and 1909.
—From U.S. Census Data.

FIELD CROPS - WHEAT

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1850 - 1920.)

U N I T E D S T A T E S

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Production per Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Per Acre (bu)	Farm Reporting Crop (bu)
1849	4.33	[illegible]	[illegible]	16.04	--	--	----
1859	5.50	1.06	[illegible]	20.56	33.41	--	----
1869	7.46	1.52	108.10	33.99	43.59	--	--
1879	9.16	1.61	114.62	40.40	39.90	13.0	--
1889	7.43	1.31	102.81	[illegible]	54.68	12.9	--
1899	8.66	1.59	114.75	42.46	65.05	12.5	[illegible]
1909	7.41	1.44	107.42	39.21	55.05	13.4	483.5
1919	--	--	--	--	--	--	--

N E W E N G L A N D

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Production per Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Per Acre (bu)	Farm Reporting Crop (bu)
1849	.40	.10	6.31	2.16	--	--	--
1859	.35	.09	5.39	2.06	2.64	--	--
1869	.29	.08	5.54	2.13	3.15	--	--
1879	.31	.09	5.921	[illegible]	1.07	15.5	--
1889	.06	.03	1.52	.60	.29	19.[illegible]	--
1899	.03	.02	.37	.46	.52	18.0	26.2
1909	.02	.02	.61	.33	.41	15.5	31.4
1919	.07	.03	3.43	--	--	--	--

M A S S A C H U S E T T S

Year	Unit Total Population (bu)	Acre Improved Farm Land (bu)	Production per Farm (bu)	Work Animal (bu)	Agric'l Worker (bu)	Per Acre (bu)	Farm Reporting Crop (bu)
1849	.03	.015	.92	.55	--	--	--
1859	.10	.055	3.36	1.39	1.39	--	--
1869	.02	.02	1.31	.53	.40	--	--
1879	.009	.007	.41	.21	.24	16.4	--
1889	.009	.001	.05	.05	.03	17.1	--
1899	.0006	.001	.03	.02	.03	19.4	35.5
1909	--	--	--	--	--	--	22.7
1919	.01	.04	1.04	--	--	--	47.3

Tobacco

The tobacco crop has grown greatly. In 1900 the crops of the United States, New England and Massachusetts were respectively six, twenty-seven, and seventy times as large as those of 1849; in 1919 the New England and Massachusetts crops were respectively forty and one hundred times the earliest one considered. The most phenomenal rate of increase of New England tobacco production was from 1849 to 1859. New England leads the country in production with 1,600 pounds per crop acre, Massachusetts almost equalling it, the national average being around 750 pounds. Production per worker in the United States has decreased 36.5% from 134 pounds, while in New England it has reached 135 pounds, an increase of 335%, and in Massachusetts 142 pounds, an increase of 180%. Perhaps 100 pounds per worker may be taken as a fair average, as the amount varies greatly from locality to locality and from year to year. Massachusetts farms growing the crop report the highest average yields, over 4 tons each, New England farms 1½ tons each, the United States farms 1½ tons each.

Orchard Products and Fruits

Apples

The nation's largest fruit crop is that of apples. Statistics for this and some other orchard fruits were first given in the eleventh census of the United States in 1890. From that time to 1929 the United States total crop has increased from about 145 million bushels to 175 million bushels and dropped back again while in New England the crop increased from 10½ million to 12 million bushels. The Massachusetts crop increased from an apparently low yield of 1,699,110 bushels to 3,187,211 bushels. The number of bearing trees for the United States rose sharply from 120 millions to 200 millions from 1889 to 1899 and then followed a

FIELD CROPS - TOBACCO.

Total Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1849 - 1919.)

Total Productions in Pounds.

Year	United States	New England	Massachusetts	References.
1849	199,752,655	1,405,920	138,246	
1859	434,209,461	9,266,445	3,233,198	
1869	262,735,341	15,870,589	7,312,885	
1879	472,661,157	19,717,398	5,369,436	
1889	488,256,646	11,837,083	2,794,818	11 C/90
1899	868,112,865	23,810,584	6,406,570	
1909	1,055,764,806	37,961,893	9,549,306	13 C/
1919	1,372,993,211	56,961,893	14,030,589	20

Acreage.

Year	United States	New England	Massachusetts	References.
1879	638,841	12,199	3,358	
1889	695,301	8,461	2,012	
1899	1,101,460	14,212	3,826	
1909	1,294,911	21,745	5,521	13 C/677
1919	1,864,080	36,235	9,109	20

Yield in Pounds Per Acre.

Year	United States	New England	Massachusetts	References.
1879	740	1,616	1,599	
1889	702	1,400	1,389	
1899	788	1,675	1,674	
1909	815	1,746	1,730	13 C/679
1919	737	1,570	1,540	20

Number of Farms Reporting the Crop.

Year	United States	New England	Massachusetts	References.
1899	308, 292	4,026	1,009	
1909	376,919	3,865	910	13 C/677
1919	--	- -	1,223	20

FIELD UNITS - TOBACCO

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1850 - 1920.)

UNITED STATES

Year	Unit Total Population (lbs)	Acre Improved Farm Land (lbs)	Production Per Farm (lbs)	Work Animal (lbs)	Agric'l Worker (lbs)	Crop Acre (lbs)	Farm Reporting Crop (lbs)
1849	--	--	--	--	--	--	--
1859	13.81	2.66	212.42	51.06	133.97	--	--
1869	8.31	1.39	98.77	31.04	44.36	--	--
1879	9.42	1.66	117.90	41.64	61.62	740.	--
1889	7.78	1.37	106.96	39.35	57.00	702.	--
1899	11.41	2.09	151.31	56.99	53.17	788.	1,815.9
1909	11.45	2.23	165.96	65.87	55.05	815.	[illegible].4
1919	--	--	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (lbs)	Acre Improved Farm Land (lbs)	Production Per Farm (lbs)	Work Animal (lbs)	Agric'l Worker (lbs)	Crop Acre (lbs)	Farm Reporting Crop (lbs)
1849	--	--	--	--	--	--	--
1859	2.96	.76	56.38	17.53	31.17	--	--
1869	4.54	1.32	97.35	34.64	50.41	--	--
1879	4.92	1.50	96.15	42.71	65.35	1,616.	--
1889	2.52	1.10	62.36	24.62	38.84	1,400.	--
1899	4.26	2.98	124.08	55.22	38.83	1,675	5,914.2
1909	5.79	5.25	201.07	110.41	135.31	1,746	[illegible]
1919	7.71	9.81	362.35	--	--	--	--

MASSACHUSETTS

Year	Unit Total Population (lbs)	Acre Improved Farm Land (lbs)	Production Per Farm (lbs)	Work Animal (lbs)	Agric'l Worker (lbs)	Crop Acre (lbs)	Farm Reporting Crop (lbs)
1849	--	--	--	--	--	--	--
1859	2.62	1.50	90.82	37.59	51.10	--	--
1869	5.02	4.21	275.96	111.70	100.43	--	--
1879	3.01	2.38	139.31	72.36	[illegible].64	1,599	--
1889	1.25	1.69	81.31	38.04	40.91	1,4[illegible]	--
1899	2.[illegible]8	4.96	161.36	38.66	16.37	1,674	6,349.4
1909	2.84	3.20	253.67	161.19	142.20	1,730	10,394.9
1919	3.71	15.72	446.32	--	--	1,640	11,046.1

decrease of 25% in 1909. In New England and Massachusetts contemporary gains and losses in crops and number of bearing trees were moderate and the results were net losses which have continued up to 1919. Furthermore, the national yield of fruit per bearing tree has dropped from 1 1/5 bushels to barely one, while New England's has grown from just over 1 to 1¼ bushels in 1909 and in Massachusetts the increase has been from 1 to nearly 2 bushels per tree. New England's yield increased to nearly 2 bushels by 1919 and Massachusetts' to 2 3/5 bushels, almost a barrel per tree. This decided increase of yield per tree in New England has accounted for increase of total production in spite of decreased number of trees. While the number of farms reporting bearing trees has not been published except for 1910, it is to be noted that the Massachusetts farm produces fully twice the apples the average farm of the nation and a third more than that of New England. The production per agricultural worker of the United States has fallen from practically 17 to 15 bushels while that of New England and Massachusetts has risen from 34 and 27 to 37, over three times the national average.

Peaches

Peaches are rather erratic producers. In New England they are not grown to any extent north of Massachusetts owing to winter cold and spring frosts at blossoming time. The crop even in Massachusetts averages very small. Even in most sections where crops are more nearly reliable, cold often greatly injures buds and blossoms. The erratic nature of production is well shown by the way production per bearing tree varies from practically nothing to fair crops from year to year, also by the fact that nearly doubling the number of bearing trees in the United States from 1889 to 1899 was accompanied

ORCHARD and FRUIT PRODUCTS
in the
United States, New England and Massachusetts,
Census Years, 1889 - 1919.
(U.S. Census Data, 1890 - 1920)

APPLES

Year	United States	New England	Massachusetts	Reference
	Total Production in Bushels			
1889	143,105,689	10,401,424	1,690,110	
1899	175,397,600	11,649,404	3,023,436	24/48
1909	146,122,318	10,565,457	2,336,259	130/710
1919	136,560,997	12,970,255	3,157,211	28
	Number of Bearing Trees			
1889	120,152,797	9,495,522	1,697,561	112/498
1899	201,794,764	11,187,266	1,856,046	125/11617
1909	151,322,349	8,210,152	1,367,379	130/710
1919	115,309,165	6,351,577	1,315,370	28
	Number of Farms Reporting Apple Trees of Bearing Age			
1909	2,937,555	137,765	27,337	130/710
1919	---	---	24,270	28

PEACHES

Year	United States	New England	Massachusetts	Reference
	Total Production in Bushels			
1889#	36,367,747	47,417	7,472	
1899	15,433,603	104,737	17,936	24/48
1909	35,470,276	306,903	71,756	130/711
1919	50,686,082	483,000	113,130	
	Number of Bearing Trees			
1889#	52,885,397	210,105	67,004	110/499
1899	99,919,428	855,298	301,405	125/11 617
1909	94,506,657	723,816	154,592	130/711
1919	65,646,101	993,003	546,260	28
	Number of Farms Reporting Peach Trees of Bearing Age			
1909	1,343,610	12,360	3,966	130/711
1919	---	---	7,035	28

Peaches only; nectarines added in 1899, but outside California they are negligible.

ORCHARD PRODUCTS - APPLES (Total)

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1890 - 1920.)

UNITED STATES

Year	Production Per Unit Total Population (bu)	Bearing Tree (bu)	Farm (bu)	Agricultural Worker (bu)	Work Animal (bu)	Farm Reporting Crop (bu)
1889	2.29	1.19	31.35	16.71	8.88	--
1899	2.31	.87	30.57	16.80	11.31	--
1909	1.59	.97	22.97	11.77	8.33	49.0
1919	--	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (bu)	Bearing Tree (bu)	Farm (bu)	Agricultural Worker (bu)	Work Animal (bu)	Farm Reporting Crop (bu)
1889	2.23	1.10	55.23	34.46	21.84	--
1899	2.08	1.05	60.71	40.52	31.91	--
1909	1.60	1.23	55.66	37.43	30.56	76.3
1919	1.64	1.90	77.10	--	41.30	--

MASSACHUSETTS

Year	Unit Total Population (bu)	Bearing Tree (bu)	Farm (bu)	Agricultural Worker (bu)	Work Animal (bu)	Farm Reporting Crop (bu)
1889	.75	.99	49.17	24.24	25.00	--
1899	1.03	1.63	80.17	45.43	42.03	--
1909	.76	1.37	69.08	37.97	40.38	91.3
1919	.33	2.61	99.60	--	65.[illegible]9	131.3

ORCHARD PRODUCTS - PEACHES

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1890 - 1920.)

UNITED STATES

Year	Unit Total Population (bu)	Production Per Bearing Tree (bu)	Production Per Farm (bu)	Agric'l Worker (bu)	Work Animal (bu)	Farm Reporting Crop (bu)
1889	.58	.67	7.97	4.25	[illegible]	--
1899	.20	.15	2.69	1.48	1.00	--
1909	.33	.38	5.93	2.86	2.03	19.2
1919	--	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (bu)	Production Per Bearing Tree (bu)	Production Per Farm (bu)	Agric'l Worker (bu)	Work Animal (bu)	Farm Reporting Crop (bu)
1889	.01	.23	.25	.16	.19	--
1899	.02	.112	.55	.36	.29	--
1909	.06	.56	2.16	1.45	1.18	31.6
1919	.07	.49	3.05	--	1.63	--

MASSACHUSETTS

Year	Unit Total Population (bu)	Production Per Bearing Tree (bu)	Production Per Farm (bu)	Agric'l Worker (bu)	Work Animal (bu)	Farm Reporting Crop (bu)
1889	.003	.09	.22	.10	.10	--
1899	.01	.103	.74	.42	.39	--
1909	.03	.59	2.49	1.32	1.45	13.2
1919	.05	.62	6.66	--	4.35	30.5

by a cut of 7/12 of the crop. About the only really stable factor upon which to base judgment of the peach industry is the number of bearing trees. From 1889 to 1909 this rose from about 54 millions to 94 millions. In New England the increase was from 310,105 to 7[illegible], then to nearly a million in 1919. Massachusetts shows an increase from about 67,000 to 346,000 trees, but with sharp increases and declines of numbers alternating. On the whole, the United States has nearly doubled its plantings. In New England trees increased to two and one-half times the number in 1889 and in Massachusetts to twice that number. From 1909 to 1919 both New England and Massachusetts made further gains, Massachusetts trees again increasing 100% so that at present there are nearly 350,000 bearing peach trees in the state.

Pears

Pear statistics resemble those of apples to some extent, especially in rise in number of bearing trees for all sections and in yield per tree for the New England states and loss of yield in the United States. The nation trebled its number of bearing trees from 1889 to 1909 while New England and Massachusetts fell off, and more sharply since 1910. Total production for the United States rose from 3,064,375 bushels in 1889 to 8,840,733, or nearly thrice the number in the earlier year. In New England it increased 45% from practically 156,000 to 224,000 in 1909; in Massachusetts the increase was 31%, making production 96,000 bushels. United States and Massachusetts farms reporting pears produced almost the same quantities of pears per farm in 1909 - 6.9 bushels, New England as a whole producing only about two-thirds as much per farm.

Maple Sugar and Syrup

Maple sugar and syrup may perhaps be classed as orchard, or at least, as tree crops. The proportion of maple sap made into

ORCHARD and FRUIT PRODUCTS
in the
United States, New England and Massachusetts.
Census Years, 1889 - 1919.
(U.S. Census Data, 1890 - 1920)

PEARS

Total Production in Bushels

Year	United States	New England	Massachusetts	Reference
1889	3,064,375	155,933	71,535	
1899	6,625,417	133,728	40,011	1/45, 49
1909	5,840,733	135,345	28,071	137/711
1919	14,204,256	194,206	64,466	25

Number of Bearing Trees

Year	United States	New England	Massachusetts	Reference
1889	5,115,068	308,644	136,346	117/499
1899	17,716,134	337,656	143,503	135/11 616
1909	15,171,524	296,374	113,365	137/711
1919	14,647,412	260,483	93,650	25

Number of Farms Reporting Pear Trees of Bearing Age

Year	United States	New England	Massachusetts	Reference
1909	1,276,366	43,168	13,930	137/711

* Connecticut data not included because not yet published; the state reported in 1889, 1899 and 1909 respectively, 65,141, 79,242 and 56,733 bearing trees.

ORCHARD PRODUCTS - PEARS

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1890 - 1920.)

UNITED STATES

Year	Unit Total Population (bu)	Production Per Bearing Tree (bu)	Farm (bu)	Agric'l Worker (bu)	Work Animal (bu)	Farm Reporting Crop (bu)
1889	.05	.60	.67	.56	.19	--
1899	.09	.37	1.15	.63	.43	--
1909	.10	.58	1.39	.71	.51	6.93
1919	--	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (bu)	Production Per Bearing Tree (bu)	Farm (bu)	Agric'l Worker (bu)	Work Animal (bu)	Farm Reporting Crop (bu)
1889	.03	.51	.82	.51	.32	--
1899	.03	.51	.96	.64	.50	--
1909	.04	.79	1.24	.85	.68	1.55
1919	.03	--	1.24	--	.66	--

MASSACHUSETTS

Year	Unit Total Population (bu)	Production Per Bearing Tree (bu)	Farm (bu)	Agric'l Worker (bu)	Work Animal (bu)	Farm Reporting Crop (bu)
1889	.03	.52	2.08	1.03	.97	--
1899	.03	.60	2.36	1.34	1.24	--
1909	.03	.55	2.60	1.43	1.52	6.90
1919	.02	.95	2.64	--	1.73	--

sugar and into syrup varies greatly from year to year. The statistics of such yields are combined and will be discussed in terms of sugar alone. Vermont is a leader in maple sap production and so places New England well up in the national showing. In 1910 that state stood first in sugar production, third in syrup production among the states of the nation.

Maple sap runs are probably as much affected by weather and season, as any important crop. Some years the season is short and the run small; some years the reverse happens, and as the sap is produced in large quantities in comparatively few states, variation in production from year to year is great.

From 1860 on the quantites of maple products of the United States and New England are fairly steady, with possibly slight loss since 1890; Massachusetts, however, seems clearly to have lost half her little part of production since that year. Between 1900 and 1910 the number of farms reporting maple products in the United States grew from 62,718 to 87,537, almost 40%; in New England almost 30%, in Massachusetts 52½% with yields more or less corresponding, which make it look as if the great reduction in yield from 1890 to 1900 was due to economic conditions rather than weather or season. Possibly bearing this out is also the increase of production per farm producing to be noted in the United States and New England. Per agricultural worker great variation in amount of maple products from year to year is shown, but on the whole, the New Englander produces a little under 50 pounds, the Massachusetts man 10 pounds, the United States worker nearly 4 pounds.

Small Fruits

The small fruits considered are cranberries and strawberries separately; and blackberries (and dewberries), currants, gooseberries and raspberries (and loganberries) collectively. Dewberries and logan-

ORCHARD and FRUIT PRODUCTS
in the
United States, New England and Massachusetts.
Census Years, 1850 - 1919.
(U.S. Census Data, 1850 - 1920)

MAPLE SUGAR and SYRUP
Sugar (Total Production in Pounds)

Year	United States	New England	Massachusetts	References
1850	34,253,436	8,033,033	795,525	
1860	40,120,205	13,009,672	1,006,073	
1870	28,443,645	11,262,377	399,800	
1880	36,576,061	15,769,241	573,793	
1890	32,952,927	16,900,264	383,674	112/89
1900	11,928 770	5,425,160	102,990	
1909	14,060,206	5,468,175	156,082	190/196
1919	9,691,854	6,679,599#	75,150	20

Connecticut data not included because not yet published. The state figures for 1900 and 1909 were respectively as follows: syrup 843 and 4,236 gallons; sugar 4,930 and 10,207 pounds; syrup and sugar as sugar 11,040 and 41,977 pounds. Farms reporting sugar and syrup 59 and 307.

Syrup - Total Production in Gallons

Year	United States	New England	Massachusetts	References
1850	Syrup not reported by the U.S. Census.			
1860	1,597,589	116,349	15,307	
1870	921,057	19,671	2,526	
1880	1,796,048	104,999	15,017	
1890	2,258,376	207,236	38,632	11/89
1900	2,056.611	246,652	17,174	
1909	4,106,418	622,751	53,091	137,697
1919	3,507,745	344,939#	17,950	20

See note above

Maple Sugar and Syrup as Sugar - (Total Production in Pounds)
(The sum of the above tables, syrup converted into terms of sugar by multiplying by 7½. See Farmers' Bulletin 516, p. 41.) 31

1860	52,102,123	14,337,490	1,122,031
1870	15,351,572	11,718,910	417,340
1880	50,046,421	17,356,734	598,321
1890	49,393,747	18,053,784	583,893
1900	27,353,353	7,075,050	230,796
1909	44,853,541	13,138,803	553,135
1919	35,999,941	13,016,042#	207,823

See note above.

ORCHARD and FRUIT PRODUCTS
in the
United States, New England and Massachusetts.
Census Years, 1850 - 1920.
(U.S. Census Abs., 1850 - 1920)

MAPLE SUGAR AND SYRUP

Number of Farms Reporting Sugar and Syrup

Year	United States	New England	Massachusetts	[illegible]
1900	[illegible],718	13,14[illegible]	1,500	
1909	[illegible]7,537	17,6[illegible]	1,385	
1919	- - -	17,[illegible]	1,846	[illegible]

Trees Tapped for [illegible]

1900	18,899,533	6,489,379	306,661	[illegible]
1919	17,457,144	7,091,329	201,751	40

† Connecticut data not included because not yet published. The state figures for 1900 and 1909 were respectively as follows: farms reporting sugar and syrup 89 and 307.

ORCHARD PRODUCTS - MAPLE SYRUP AND SUGAR AS SUGAR

Average Production
in the
United States, New England and Massachusetts.
(Calculated from U.S. Census Reports, 1860 - 1920.)

U N I T E D   S T A T E S

Year	Unit Total Population (lbs)	Production per Bearing Tree (lbs)	Farm (lbs)	Agric'l Worker (lbs)	Work Animal (lbs)	Farm Reporting Crop (lbs)
1860	1.66	--	25.49	1.61	6.13	--
1870	.40	--	5.77	2.60	1.31	--
1880	1.00	--	12.46	6.55	4.41	--
1890	.80	--	10.93	5.82	3.10	--
1900	.36	--	4.77	2.62	1.76	436.1
1909	.47	2.37	7.05	3.61	2.07	513.6
1919	--	--	--	--	--	--

N E W   E N G L A N D

Year	Unit Total Population (lbs)	Production per Bearing Tree (lbs)	Farm (lbs)	Agric'l Worker (lbs)	Work Animal (lbs)	Farm Reporting Crop (lbs)
1860	4.57	--	77.95	40.23	27.21	--
1870	3.36	--	64.37	37.43	25.72	--
1880	4.33	--	83.76	57.51	37.60	--
1890	4.24	--	105.04	65.54	41.54	--
1900	1.30	--	37.91	25.31	19.93	553.6
1909	2.01	1.90	69.59	46.80	33.21	742.6
1919	--	--	--	--	--	--

M A S S A C H U S E T T S

Year	Unit Total Population (lbs)	Production per Bearing Tree (lbs)	Farm (lbs)	Agric'l Worker (lbs)	Work Animal (lbs)	Farm Reporting Crop (lbs)
1860	.91	--	31.48	17.72	10.03	--
1870	.29	--	13.75	5.73	6.37	--
1880	.55	--	25.42	15.03	1.32	--
1890	.26	--	16.99	3.37	7.95	--
1900	.14	--	10.52	3.96	5.52	396.8
1909	.12	1.16	15.04	3.27	8.79	364.0
1919	.13	2.01	15.87	--	--	383.5

berries are so few in numbers that they affect the figures but little. Cranberries and strawberries are important crops, but the others are of much less importance, even when classed together.

Cranberries

In 1909 Massachusetts led the nation in the production of cranberries, producing three-fifths the 38¼ million quarts. It is the state's chief berry crop. Statistics of the crop were first given by the United States Census Bureau in 1900; as yet those for 1910 are the only others available. From 1899 to 1909 production increased, if judged by those two years alone, for the United States, 21%; for New England, 17%; for Massachusetts, 18%, with practically no change in 1919. In production per farm reporting the crop Massachusetts leads by far but it is to be noted that the acreage of the berries per such farm has jumped from less than 3 in 1899 to almost 5 in 1909 and nearly 9 in 1919, with increase in acreage, but with a decrease of over half the number of farms. Also, production per crop acre was over twice that of the United States in 1899 though it seems to be declining slowly. New England's cranberries are grown almost wholly in Massachusetts, so the showings are almost identical except as to production per worker, which really has as little significance here as anywhere, since the berry crop is so localized and specialized by its requirements that at most very few agricultural workers participate in its production.

Strawberries.

Strawberries are the next important small fruit, the United States producing in round numbers 255,000,000 quarts; New England's production rose one-sixth from 1899 to 1909 from 10,181,750 quarts to 11,741,838, Massachusetts growing practically half of them. From

ORCHARD and FRUIT PRODUCTS
in the
United States, New England and Massachusetts.
Census Years, 1850 - 1919.
(U.S. Census Data, 1850 - 1920)

STRAWBERRIES

Total Production in Quarts

Year	United States	New England	Massachusetts	References
1899	31,600,512	19,677,216	19,164,992	
1909	23,243,060	23,026,203	22,714,406	130/705
1919	17,691,550	---	22,918,105	21

Acreage

Year	United States	New England	Massachusetts	References
1899	20,364	5,316	5,128	
1909	16,431	7,031	6,577	130/705
1919	---	---	7,096	21

Number of Farms Reporting the Crop

Year	United States	New England	Massachusetts	References
1899	2,907	2,103	1,357	182/1610
1909	3,910	2,335	1,380	130/705
1919	---	---	556	21

CURRANTS

Total Production in Quarts

Year	United States	New England	Massachusetts	References
1899	18,593,695	677,220	255,580	
1909	10,443,532	483,291	213,310	130/706
1919	---	343,396#	266,903	21

Acreage

Year	United States	New England	Massachusetts	References
1899	12,366	476	196	
1909	7,362	430	343	130/706
1919	---	461#	256	21

Connecticut data not included because not published yet. In 1899 and 1909 respectively the state reported 175 and 54 acres with a production of 245,990 and 74,488 quarts.

GOOSEBERRIES

Total Production in Quarts

Year	United States	New England	Massachusetts	References
1899	3,320,530	109,490	46,388	
1909	5,282,343	154,233	47,827	130/706
1919#	---	---	---	

The 14th Census does not report gooseberries separately.

Acreage

Year	United States	New England	Massachusetts	References
1899	6,572	79	30	
1909	4,766	120	42	130/706

ORCHARD and SMALL FRUITS
in the
United States, New England and Massachusetts.
Census Years, 1850 - 1919.
(U.S. Census Data, 1850 - 1920)

STRAWBERRIES

Year	United States	New England	Massachusetts	References
	Total Production in Quarts			
1899	257,427,103	12,131,750	4,997,440	
1909	255,702,035	11,741,329	5,318,367	130/704
1919	176,931,550	8,319,419	3,152,371	21
	Acreage			
1899	151,363	[illegible],263	1,027	
1909	143,045	4,432	1,915	130/704
1919	119,395	3,553	1,431	21
	Number of Farms Reporting Strawberries			
1909	216,544	13,757	4,654	130/704
1919	---	---	2,357	21

RASPBERRIES (and LOGANBERRIES)

Year	United States	New England	Massachusetts	References
	Total Production in Quarts			
1899	76,623,107	1,660,480	553,510	
1909	60,913,196	1,119,007	372,136	130/705
1919	61,333,509	1,352,647#	467,335	21
	Acreage			
1899	69,916	1,159	415	
1909	43,663	1,003	333	130/705
1919	---	1,254#	431	21

Connecticut data not included because not yet published. In 1899 and 1909 respectively the state reported 316 and 259 acres with a production of 503,210 and 334,250 quarts.

BLACKBERRIES and DEWBERRIES

Year	United States	New England	Massachusetts	References
	Total Production in Quarts			
1899	62,139,335	1,176,350	324,360	
1909	55,343,570	904,595	387,567	130/704
1919	39,945,078	790,102	251,951	22
	Acreage			
1899	50,211	735	306	
1909	49,004	690	287	130/704
1919	---	590#	245	22

Connecticut report not yet published and therefore not included. The state reported 177 and 124 acres in 1899 and 1909 respectively.

ORCHARD and FRUIT PRODUCTS
in the
United States, New England and Massachusetts.
Census Years, 1850 - 1919.
(U.S. Census Data, 1850 - 1920)

THE ABOVE SMALL FRUITS
(except strawberries and cranberries)

Total Production in Quarts

Year	United States	New England	Massachusetts	References
1899	166,731,217	3,623,480	1,332,840	
1909	131,995,141	2,561,126	958,769	
1919	---	---	960,237	

Acreage

Year	United States	New England	Massachusetts	References
1899	139,744	2,489	993	
1909	110,299	1,309	760	
1919	---	1,649/	1,037	

/ Connecticut data not included because not yet published. In 1899 and 1909 respectively the state reported 725 and 480 acres of these fruits.

SMALL FRUITS - CRANBERRIES

Average Production in the United States, New England and Massachusetts (Calculated from U. S. Census Reports, - 1850 - 1920.)

UNITED STATES

Year	Unit Total Population (qts)	Farm (qts)	Agricultural Worker (qts)	Work Animal (qts)	Farm Reporting Crop (qts)	Crop Acre (qts)
1899	.42	5.51	3.03	2.08	10,870.5	1551.78
1909	.42	6.01	3.08	2.19	9,780.8	2074.93
1919	--	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (qts)	Farm (qts)	Agricultural Worker (qts)	Work Animal (qts)	Farm Reporting Crop (qts)	Crop Acre (qts)
1899	3.52	102.55	68.45	53.90	9,356.7	3383.29
1909	3.51	121.96	82.01	66.97	9,654.6	3274.95
1919	--	--	--	--		--

MASSACHUSSETTS

Year	Unit Total Population (qts)	Farm (qts)	Agricultural Worker (qts)	Work Animal (qts)	Farm Reporting Crop (qts)	Crop Acre (qts)
1899	6.83	508.15	287.97	266.41	10,320.4	3737.32
1909	6.74	615.29	338.23	359.63	16,825.6	3453.63
1919	5.95	716.17	--	468.05	26,773.5	3229.72

SMALL FRUITS - BLACK-, GOOSE-, AND RASP- BERRIES, AND CURRANTS

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1850 - 1920.)

UNITED STATES

Year	Unit Total Population (qts)	Farm (qts)	Agricultural Worker (qts)	Work Animal (qts)	Farm Reporting Crop (qts)	Crop Acre (qts)
1899	2.19	29.06	15.97	10.75	--	1275.3
1909	1.43	20.75	10.63	7.57	--	1196.7
1919	--	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (qts)	Farm (qts)	Agricultural Worker (qts)	Work Animal (qts)	Farm Reporting Crop (qts)	Crop Acre (qts)
1899	.65	18.88	12.60	9.93	--	1455.8
1909	.39	13.57	9.12	7.45	--	1109.2
1919	--	--	--	--	--	--

MASSACHUSETTS

Year	Unit Total Population (qts)	Farm (qts)	Agricultural Worker (qts)	Work Animal (qts)	Farm Reporting Crop (qts)	Crop Acre (qts)
1899	.49	36.67	20.78	19.32	--	1385.6
1909	.28	25.89	14.23	15.13	--	995.6
1919	.26	30.82	--	20.14	--	935.1

SMALL FRUITS - STRAWBERRIES

UNITED STATES

Year	Unit Total Population (qts)	Farm (qts)	Agricultural Worker (qts)	Work Animal (qts)	Farm Reporting Crop (qts)	Crop Acre (qts)
1899	3.38	44.87	24.66	16.60	--	1700.7
1909	2.77	40.20	20.60	14.67	1180.8	1785.6
1919	--	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (qts)	Farm (qts)	Agricultural Worker (qts)	Work Animal (qts)	Farm Reporting Crop (qts)	Crop Acre (qts)
1899	1.82	53.06	35.42	27.89	--	2422.5
1909	1.79	62.19	41.82	34.15	853.5	2649.3
1919	.86	40.36	--	21.62	--	1884.7

MASSACHUSETTS

Year	Unit Total Population (qts)	Farm (qts)	Agricultural Worker (qts)	Work Animal (qts)	Farm Reporting Crop (qts)	Crop Acre (qts)
1899	1.78	132.50	75.09	89.47	--	2455.5
1909	1.64	149.49	82.18	87.38	1185.8	2738.9
1919	.82	98.48	--	64.36	647.6	2202.2

1899 to 1909 the acreage held with comparatively slight change, but from then to 1919 New England and Massachusetts show losses to one-quarter, and the number of Massachusetts farms growing the crop dropped almost two-fifths. New England and Massachusetts seem to beat by half the average yield per acre of the rest of the country, have 2,500 quarts. But, for the one year (1909) for which data is available, New England's production per farm is 320 quarts less than that of Massachusetts and the United States. This shows New England plantings per farm average smallest. Per agricultural worker, Massachusetts leads with a production of 64-65 quarts of berries each, New England has two-fifths as many and the United States less than a quarter of this production.

Other Small Fruits

Blackberries (and dewberries), gooseberries, raspberries and currants are considered collectively. Some are grown more or less commonly in most berry producing sections. Production of all in 1899 was 166,731,217 quarts, not quite two-thirds that of strawberries alone; in 1909 barely half as much as the strawberry crop. Massachusetts produced just over a third of New England's crop with 1,385,840 quarts in 1899 and 955,760 in 1909. The Massachusetts worker produces 17 quarts on the average, the United States worker 12½, and the New Englander about 11. quarts.

Animal Products

Milk

The earlier statistics of dairy products given by United States Census Bureau are not comparable with each other, and it is only since 1889 that they have been taken with any uniformity. National production has risen at each census from 5,210,000,000 gallons in 1889 to 7,466,000,000 in 1909, increasing 43%. Production rose from 83 to 95½ gallons per capita of population, then dropped to 81 gallons. New

ANIMAL PRODUCTS
in the
United States, New England and Massachusetts
(Data from U.S. Censuses of 1880 - 1920.)

MILK

Total Production in Gallons

Year	United States	New England	Massachusetts	References
1889	5,210,125,567	338,941,532	33,571,824	11/36
1899	7,265,804,304	439,300,243	105,571,873	
1909	7,466,406,384	406,643,248	90,433,336	150/436
1919	7,805,143,792	385,638,607 ~~[illegible]~~	76,316,309	23

Number of Farms* Reporting MILCH COWS

Year	United States	New England	Massachusetts	References
1900	4,513,895	154,663	33,162	12/folio
1910	5,140,869	147,033	27,193	15/354-5
1920	- - -	136,384#	22,551	22

* These may be considered as producing milk, though not always reporting it. In 1920 the census figures are of farms reporting dairy cows, excluding some beef-type animals previously included.

# Connecticut data not included because not yet published; in 1900 and 1910 respectively, 21,497 and 20,844 farms reported milch cows.

BUTTER MADE ON FARMS

Total Production in Pounds

Year	United States	New England	Massachusetts	References
1879	777,250,287	65,455,749	9,655,887	10/141
1889	1,024,223,468	63,179,472	8,353,703	11/435
1899	1,071,626,056	51,454,627	4,930,262	
1909	994,650,610	40,732,733	3,364,516	15/437
1919	707,666,492	22,093,227	2,019,231	25

Number of Farms Reporting Making BUTTER

Year	United States	New England	Massachusetts	References
1899	3,617,566	101,953	11,560	
1909	3,737,749	83,010	9,035	136/437
1919	- - -	55,183#	7,361	23

# Connecticut data not included because not yet published. In 1899 and 1909, respectively, 11,198 and 9,106 farms reported butter making.

ANIMAL PRODUCTS - MILK (Total)

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1890 - 1920.)

UNITED STATES

Year	Unit Total Population (gal)	Production Per Agricultural Worker (gal)	Farm (gal)	Per Milk Cow (gal)	Per Farm Reporting Dairy Cows (gal)
1889	83.20	603.24	1,141.41	315.54	--
1899	95.49	694.07	1,266.40	424.02	1609.7
1909	81.00	601.47	1,175.69	362.00	1452.4
1919	- -	- -	- -	- -	--

NEW ENGLAND

Year	Unit Total Population (gal)	Production Per Agricultural Worker (gal)	Farm (gal)	Per Milk Cow (gal)	Per Farm Reporting Dairy Cows (gal)
1889	72.10	1,113.30	1,734.27	412.34	--
1899	66.30	1,703.34	2,552.53	548.20	3166.9
1909	61.14	1,427.01	2,122.01	476.00	3725.0
1919	49.71	- -	2,334.91	454.20	--

MASSACHUSETTS

Year	Unit Total Population (gal)	Production Per Agricultural Worker (gal)	Farm (gal)	Per Milk Cow (gal)	Per Farm Reporting Dairy Cows (gal)
1889	36.88	1,164.37	2,402.16	479.94	--
1899	37.63	1,536.33	2,799.20	572.01	3748.7
1909	26.86	1,346.69	2,449.73	526.00	3325.8
1919	19.81	- -	2,334.81	517.99	3384.2

ANIMAL PRODUCTS - BUTTER (Made on Farms)

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1850 - 1920.)

UNITED STATES

Year	Unit Total Population (lbs)	Production Per Agricultural Worker (lbs)	Farm (lbs)	Per Milk Cow (lbs)	Per Farm Reporting Butter (lbs)
1879	15.50	101.33	193.83	62.46	—
1889	16.36	119.57	224.38	62.03	296.2
1899	14.08	102.66	186.86	62.54	262.6
1909	10.79	60.15	156.35	48.22	—
1919	- -	- -	- -	- -	

NEW ENGLAND

Year	Unit Total Population (lbs)	Production Per Agricultural Worker (lbs)	Farm (lbs)	Per Milk Cow (lbs)	Per Farm Reporting Butter (lbs)
1879	16.32	216.87	315.35	83.00	—
1889	15.44	207.49	332.54	76.85	—
1899	9.20	173.99	268.15	57.59	504.7
1909	6.22	145.03	215.74	48.39	490.7
1919	- -	- -	- -	- -	

MASSACHUSETTS

Year	Unit Total Population (lbs)	Production Per Agricultural Worker (lbs)	Farm (lbs)	Per Milk Cow (lbs)	Per Farm Reporting Butter (lbs)
1879	5.42	148.61	251.41	64.13	—
1889	3.73	119.39	243.18	48.53	—
1899	1.73	74.83	132.05	60.34	430.8
1909	1.00	50.10	91.14	19.57	372.4
1919	.52	- -	63.01	13.71	274.3

England's production rose from 339,000,000 gallons in 1889 to 490,000,000 gallons in 1899, an increase of 44%; then it dropped 14% to 400,000,000 gallons in 1909 and to 360,000,000 gallons in 1919, a loss of 25% in twenty years. Massachusetts production rose from 82,000,000 to 105,000,000 gallons from 1889 to 1909, and has since dropped like New England, to 76,000,000 gallons.

The number of farms reporting milch cows in the United States increased 13% between 1889 and 1909 but dropped 5% in New England and 3% in Massachusetts, since 1909 there has been a still sharper decline amounting to about 28% in New England, 17% in Massachusetts. Massachusetts shows decidedly the best general yield per cow, amounting to about 500 gallons whereas New England as a whole drops to 450 gallons and the United States to 350 gallons. Apparently the yield per animal has decreased everywhere, a distinctly unfavorable symptom. Per farm reporting dairy cows, Massachusetts produced from 1899 to 1909 about 3,500 gallons of milk, New England 2,500 gallons of milk, and the United States only 1,500 gallons.

Butter and Cheese Made on Farms

Farm-made butter and cheese are not necessarily made in proportion to the total amount of milk produced; in fact, since 1879 the ratio between such production and the milk supply has declined constantly. The average farm is a small producer of butter and a negligible producer of cheese. Except in the case of Massachusetts, the production of butter and cheese per cow producing milk is less the more thickly populated the region, indicating a larger proportion of milk consumed as such. Roughly, four-fifths of the farms of the United States which produce milk also produce butter; in New England and Massachusetts not more than one third. Very few farms, less than 1/3 of 1%,

ANIMAL PRODUCTS
in the
United States, New England and Massachusetts
(Data from U.S. Censuses of 1880 - 1920.)

CHEESE MADE ON FARMS

Year	Total Production in Pounds			References
	United States	New England	Massachusetts	
1889	18,726,818	1,906,970	122,900	110/36
1899	16,372,318	1,003,103	19,629	
1909	9,405,864	673,865	45,753	130/438
1919	- - -	234,338#	60,796	23

Number of Farms Reporting Making Cheese

Year	United States	New England	Massachusetts	References
1899	15,669	1,697	84	
1909	12,054	817	80	130/438
1919	- - -	855#	314	23

# Connecticut data not included because not yet published. In 1899 and 1909 respectively, 123 and 143 farms reported making 40,623 and 79,156 pounds of cheese; in 1889 the state produced 112,566 pounds.

EGGS PRODUCED ON FARMS

Year	Total Production in Dozens			References
	United States	New England	Massachusetts	
1879	456,910,916*	26,802,766	6,571,553	
1889	819,722,916*	35,538,234	8,931,393	110/36
1899	1,293,662,433*	50,686,580	12,923,630	24/74
1909	1,591,311,371*	55,078,175	14,145,240	130/514
1919	1,654,044,932**	37,631,896	9,604,274	23

Number of Farms Reporting Fowls

Year	United States	New England	Massachusetts	References
1900	5,095,280	158,688	30,504	110/329ff.
1910	5,585,032	150,643	28,154	130/415-16
1920	- - -	108,243#	25,425	25

# Connecticut data not included because not yet published; in 1900 and 1910 the state had just over 23,000 farms reporting fowls.

*All eggs

** Fowls eggs only

ANIMAL PRODUCTS - EGGS

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1890 - 1920.)

UNITED STATES

Year	Unit Total Population (doz)	Production Per Agricultural Worker (doz)	Farm (doz)	Per Bird (doz)	Farms Reporting Fowls (doz)
1889	13.09	95.73	170.53	5.37	—
1899	17.00	123.94	225.48	6.10	253.9
1909	17.26	128.19	250.15	5.33	284.9
1919	- -	- -	- -	- -	

NEW ENGLAND

Year	Unit Total Population (doz)	Production Per Agricultural Worker (doz)	Farm (doz)	Per Bird (doz)	Farms Reporting Fowls (doz)
1889	7.56	110.73	187.03	6.32	—
1899	9.07	176.32	264.15	7.67	319.4
1909	8.41	196.18	291.72	7.15	365.6
1919	5.12	- -	240.36	6.43#	—

MASSACHUSETTS

Year	Unit Total Population (doz)	Production Per Agricultural Worker (doz)	Farm (doz)	Per Bird (doz)	Farms Reporting Fowls (doz)
1889	5.99	128.10	259.53	5.23	—
1899	4.61	194.27	342.80	8.05	423.8
1909	4.20	216.63	383.16	7.37	502.4
1919	2.49	- -	300.12	6.00#	377.8

Per Chicken

make cheese. Production per worker, per milk cow and per farm generally declined sharply from 1899 to 1909 except in the case of the unimportant cheese production of New England per farm and of Massachusetts per cow.

Eggs

From 1879 to 1909 egg production totals rose everywhere, more than keeping pace with population as a whole, which is not true of the other animal products considered. From 1909 to 1919 New England and Massachusetts show loss of production per capita of population and per farm due to decrease in poultry. Yield per bird seems to have increased up to 1909, likewise per farm. This increase was most apparent in Massachusetts. Related to this last is the fact that in New England and Massachusetts total production increased 10% while the number of farms reporting fowls dropped 5%.

Wool

Wool production figures are available since 1899 only, hence are not of sufficient duration to allow much weight to be placed upon them. National production increased slightly in spite of no increase in the number of sheep of shearing age. From 1899 to 1919 production in New England fell off three-fifths from 3,500,000 pounds; in Massachusetts production fell almost as much from 196,000 pounds. The New England production at best was barely 1% of the national and the Massachusetts output only ½ of 1%. Wool is nearly gone from New England, having suffered a further sharp decline of 40% between 1909 and 1919.

Market Garden Products

Market garden products are of exceedingly varied nature and admit of little comparison as a whole except in value. And value is none too satisfactory a basis since money values change. Moreover,

ANIMAL PRODUCTS
in the
United States, New England and Massachusetts
(Data from U.S. Censuses of 1900 - 1920.)

WOOL

Year	United States	New England	Massachusetts	References
		Total Production in Pounds		
1899	276,567,534	3,557,230	195,876	
1909	289,419,977	2,006,040	127,397	132/303
1919	228,795,354	1,379,333	33,383	25

Number of Farms Reporting Sheep (of any age)

Year	United States	New England	Massachusetts	References
1899	763,518	34,145	1,447	
1909	610,894	20,340	1,023	132/502
1919	- - -	14,625[1]	839	25

[1] Connecticut data not included because not yet published; in 1900 and 1910 respectively the state reported sheep on 1,259 and 741 farms.

ANIMAL PRODUCTS - WOOL.

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1900 - 1920.)

UNITED STATES

Year	Production Per				
	Unit Total Population (lbs)	Agricultural Worker (lbs)	Farm (lbs)	Sheep of Shearing Age (lbs)	Per Farm Reporting Sheep of any age (lbs)
1899	3.63	26.49	46.64	6.94	362.2
1909	3.14	23.31	45.50	7.30	475.6
1919	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (lbs)	Agricultural Worker (lbs)	Farm (lbs)	Sheep of Shearing Age (lbs)	Per Farm Reporting Sheep of any age (lbs)
1899	.64	12.37	13.54	6.32	104.5
1909	.31	7.15	10.63	6.54	98.6
1919	.19	--	8.81	7.20	--

MASSACHUSETTS

Year	Unit Total Population (lbs)	Agricultural Worker (lbs)	Farm (lbs)	Sheep of Shearing Age (lbs)	Per Farm Reporting Sheep of any age (lbs)
1899	.07	2.94	5.19	5.76	135.4
1909	.04	1.90	3.46	5.63	124.4
1919	.02	--	2.76	6.25	94.1

ANIMAL PRODUCTS - CHEESE (Made on Farms)

Average Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1890 - 1920.)

UNITED STATES

Year	Unit Total Population (lbs)	Production Per Agricultural Worker (lbs)	Farm (lbs)	Per Milk Cow (lbs)	Per Farm Reporting Cheese (lbs)
1889	.30	2.19	4.10	1.13	--
1899	.22	1.57	2.35	.96	1044.9
1909	.10	.76	1.43	.46	780.3
1919	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population (lbs)	Production Per Agricultural Worker (lbs)	Farm (lbs)	Per Milk Cow (lbs)	Per Farm Reporting Cheese (lbs)
1889	.41	6.26	10.04	2.52	--
1899	.18	3.49	5.23	1.12	591.1
1909	.10	2.40	3.57	.40	824.8
1919	--	--	--	--	--

MASSACHUSETTS

Year	Unit Total Population (lbs)	Production Per Agricultural Worker (lbs)	Farm (lbs)	Per Milk Cow (lbs)	Per Farm Reporting Cheese (lbs)
1889	.05	1.81	3.53	.71	--
1899	.01	.29	.52	.11	233.7
1909	.01	.63	1.24	.27	571.9
1919	.02	--	1.90	.41	193.6

the census data concerning this class of farm products are unsatisfactory none being taken from the Thirteenth Census, 1909, in which it was impossible to differentiate data as desired. In general, the products considered are those miscellaneous vegetables and small fruits grown for sale within short distances of the producing point, distinguishing them partly from truck crops which are shipped long distances to markets. The values given for 1919 consist of those of vegetables raised for sale and those of small fruits, and are probably fairly comparable to the other figures given so far as Massachusetts is concerned.

The figures show only a moderate rise in sales values from 1869 to 1889, then in 1899 a jump from $29,000,000 to $99,000,000 for the United States; from $3,500,000 to $8,000,000 for New England; and from $2,350,000 to $4,800,000 for Massachusetts. This great increase is due in part to increase in urban non-producing population. The improved transportation facilities doubtless allowed increase of sales of truck crops. The difference in methods in securing census figures may explain even more. The increase of sales in New England and Massachusetts from 1899 to 1919 seems fairly comparable as given here, from $8,111,783 to $14,505,938, 79%, for New England,; from $4,833,542 to $10,522,871, 118%, for Massachusetts.

Farm Values

Gross farm values of all farm products are given for the first time for 1879 by the Tenth Census. In 1879 the products of the farms of the United States were valued at $2,212,000,000; those of New England at $103,000,000; and those of Massachusetts at $24,000,000. Merely moderate rises occurred up to 1889. From then to 1909 come jumps of 92%, 60% and 51% respectively, to $6,000,000,000 for the nation, $248,000,000 for New England, $60,000,000 for Massachusetts. These values included vegetable and animal products and animals sold and slaugh-

VALUE OF TOTAL SALES OF

MARKET GARDEN PRODUCTS SOLD

in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1869 - 1919).

Year	United States	New England	Massachusetts	References
1869	$ 20,719,229.	$3,324,701.	$1,980,331.	
1879	21,761,250	2,643,667	1,696,890	
1889	23,0[illegible]5,080	3,951,717	2,255,309	
1899	98,894,319	6,111,783	4,833,542	24/51,52
1909	(No complete data obtainable)			
1919*	- -	14,505,938	10,522,871	38

tered, which latter involves considerable duplication because of resales. The Fourteenth Census did not ask these figures.

Massachusetts has greatest values of products from the standpoints of farm, agricultural worker, acre of improved land, work animal; New England comes next, except that occasionally the United States farm as a whole produces more. Values are usually influenced by distance to market, and little study is required to see that New England farm values are often markedly higher than those of the west producing the same products; hence the west is handicapped in comparison of values, and New England is somewhat at a disadvantage in comparison to Massachusetts. The greatest differences occur in the values per agricultural worker and per farm and per work animal. All these values tend to rise in the long run. Per farm, the United States production has risen from $550 to $950, from 1879 to 1909; New England lagged a little behind until the finish at $1,300; Massachusetts values rose from $630 to $1,615. Per work animal, the United States production increased from $195 to $350 in round numbers; New England's from $325 to $720; while that of Massachusetts rose from $325 to $945. Per worker, the United States produced $290 in 1879 and $500 in 1909. New England produced $340 per worker in 1879; this had increased by 1909 to $880. In 1879 Massachusetts produced $370 per worker and by 1909 had increased the amount to $885. The larger part of these rises came from 1899 to 1909, values often barely holding their own up to 1899.

Gross values are not as satisfactory as net values upon which to base judgment, and census data give no items of expense until 1899 except amounts spent for fertilizer; then labor expenses are reported, and in 1909 feed costs. Mortgage data were given for 1900, but are not considered here.

GROSS and NET FARM VALUE of ALL FARM PRODUCTS
in the
United States, New England and Massachusetts.
(Data from U.S. Censuses of 1880 - 1920.)

Gross Value

Year	United States	New England	Massachusetts	References
1879	$ 2,212,540,927	$ 103,343,566	$ 24,160,881	
1889	2,460,107,454	106,390,360	23,072,500	170/55
1899	4,739,118,752	169,523,435	42,298,274	18 /lxxxi
1909	6,061,996,028	247,693,451	59,628,350 #	
1919	- - -	- - -	57,551,317 ##	

Totals derived from table below, "Values, 1909 and 1919"

The Fourteenth Census did not ask Value of Animals Sold and Slaughtered; 1909 figures for Massachusetts with that item deducted are $ 53,243,300.

Net Value

Year	United States	New England	Massachusetts	References
1909	$ 4,995,662,343	$ 169,171,301	$ 32,741,900	
1919	- - -	- - -	46,795,110	

Values, 1909 and 1919.
(List of Items as per Table VII,
13th Census of the U.S., Vol. V, p. cxxi.)

	1909				1919	
Product	United States	New England	Massachusetts	References	Massachusetts	References
Wool	$ 63,472,328	$ 374,577	$ 35,670	130/503	$ 55,666	
Mohair	991,597	1,275	889	130/504	337	
Milk, Butter and Cheese	643,554,889	52,962,693	14,555,827	130/530	24,765,528	
Eggs	306,688,960	18,155,991	4,230,445	130/519	6,450,693	
Poultry	202,506,272	7,361,988	2,411,078	130/515	2,953,314	
Honey & Wax	5,922,888	108,388	17,176	130/513	26,360	33/8
Animals Sold and Slaughtered	1,833,178,467	50,426,780	6,020,550	130/525	- - -	
Field Crops	2,998,704,412	141,113,339	31,946,003	130/533, 546	53,700,925	33/9
TOTAL	$ 6,061,990,028	$ 247,693,451	$ 59,263,850		$ 57,551,317	
Less Animals Sold and Slaughtered			6,020,550			
			$ 53,243,300			

FARM EXPENDITURES for
LABOR, FEED and FERTILIZER
in the
United States, New England and Massachusetts.
(From Censuses of 1880 - 1920.)

Labor

Year	United States	New England	Massachusetts	References
1899	$ 365,305,921	$ 20,757,930	$ 7,437,250	120/1705
1909	651,611,287	34,900,407	12,101,659	137/963
1919	- - -	- - -	16,577,123	51

Feed

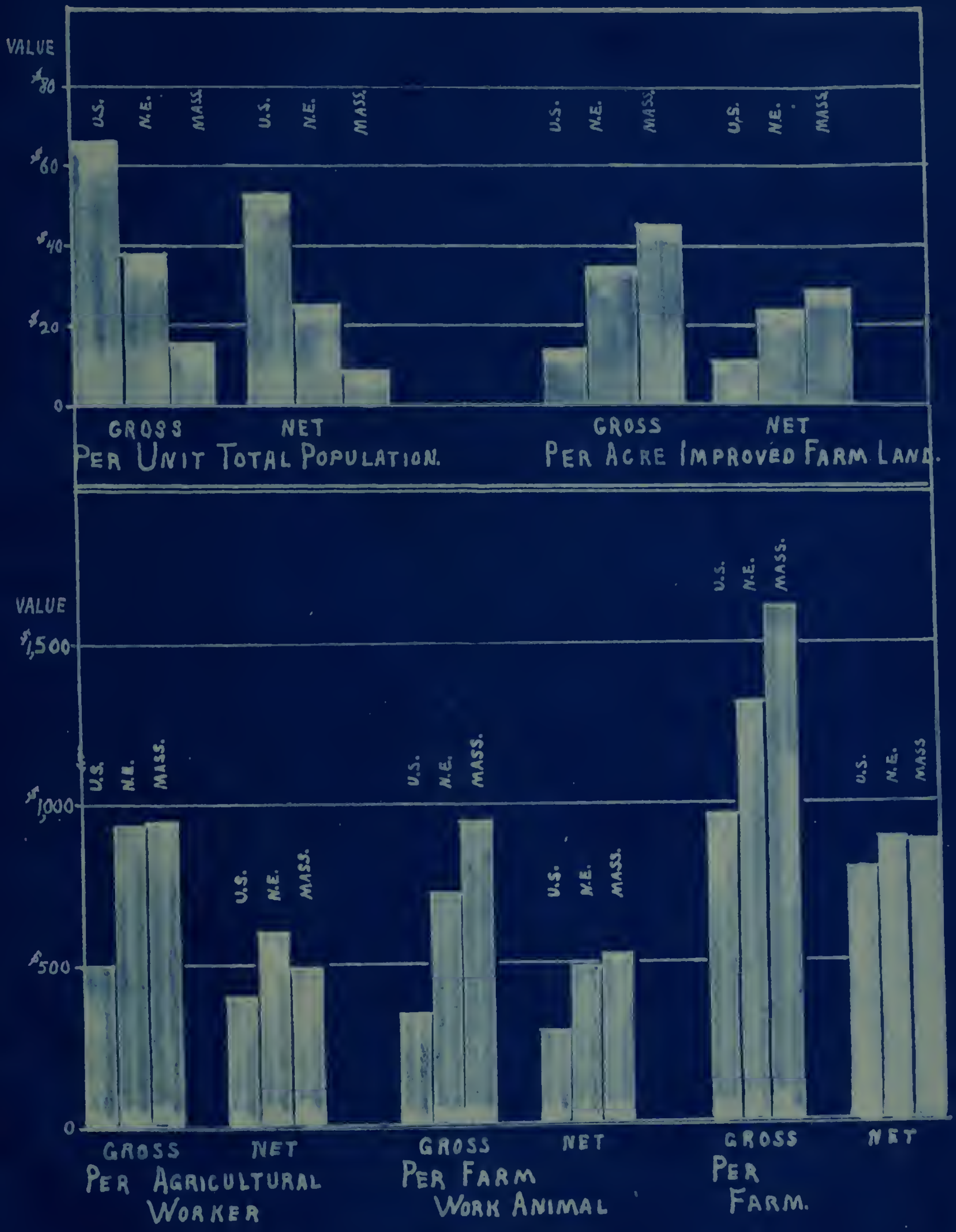
1909	$ 299,839,857	$ 34,613,964	$ 10,378,178	137/953
1919	- - -	- - -	20,272,831	51

Fertilizer

1879	$ 28,586,397	$ 1,796,426	$ 663,422	
1889	38,469,593	2,599,314	856,560	
1899	54,783,757	4,297,705	1,320,600	120/1705
1909	114,882,541	9,407,799	1,966,632	137/962
1919	- - -	- - -	3,906,753	51

Total of Above Expenses

1909	$ 1,066,333,685	78,922,170	24,446,370
1919	- - -	- - -	40,756,707



ALL FARM PRODUCTS

AVERAGE GROSS AND NET FARM VALUES OF 1909 PRODUCTION
IN THE
UNITED STATES, NEW ENGLAND AND MASSACHUSETTS.
— FROM U.S. CENSUS DATA.

ALL FARM PRODUCTS.

Average Gross Farm Value of Production
in the
United States, New England and Massachusetts
(Calculated from U.S. Census Reports, 1880 - 1920.)

UNITED STATES

Year	Unit Total Population	Acre Improved Farm Land	Farm	Work Animal	Agricultural Worker.
1879	$44.11	$ 7.70	$551.91	$194.91	$288.45
1889	39.28	6.88	538.95	152.93	287.20
1899	39.41	7.23	522.66	193.39	287.28
1909	65.77	12.80	952.93	347.78	499.19
1919	--	--	--	--	--

NEW ENGLAND

Year	Unit Total Population	Acre Improved Farm Land	Farm	Work Animal	Agricultural Worker.
1879	$25.77	$ 7.86	$498.69	$223.86	$342.41
1889	22.63	9.91	560.15	221.50	349.45
1899	17.03	11.71	496.22	260.84	331.23
1909	37.80	34.14	1311.92	720.40	832.22
1919	--	--	--	--	--

MASSACHUSETTS

Year	Unit Total Population	Acre Improved Farm Land	Farm	Work Animal	Agricultural Worker.
1879	$13.55	$11.35	$629.09	$325.62	$371.86
1889	12.54	16.94	816.68	382.10	402.65
1899	8.25	17.92	614.01	321.91	348.54
1909	15.74	51.21	1615.21	944.08	887.92
1909*	14.06	45.73	1433.48	843.06	792.91
1919	22.73	96.33	2735.91	1788.05	--

* The Fourteenth Census did not ask the value of animals sold and slaughtered. The second 1909 set of values for Massachusetts is the same as the one above minus that item, the better to make comparisons with 1919 figures.

ALL FARM PRODUCTS.

Average Net Farm Value of Production
in the
United States, New England and Massachusetts

(Calculated from U.S. Census Reports, 1909, 1919.)

UNITED STATES

Year	Unit Total Population	Acre Improved Farm Land	Farm	Work Animal	Agricultural Worker
1909	$54.19	$10.55	$785.30	$286.61	$402.43

NEW ENGLAND

Year	Unit Total Population	Acre Improved Farm Land	Farm	Work Animal	Agricultural Worker
1909	$25.82	$23.32	$896.02	$492.03	$602.55

MASSACHUSETTS

Year	Unit Total Population	Acre Improved Farm Land	Farm	Work Animal	Agricultural Worker
1909	$ 9.73	$28.12	$886.91	$518.39	$487.55
1909*	7.83	23.64	714.07	417.37	392.54
1920	12.15	51.51	1462.30	855.63	--

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* The Fourteenth Census did not ask the value of animals sold and slaughtered. The second ~~1909~~ set of values for Massachusetts for 1909 is the same as the one above minus that item, the better to make comparisons with 1919 figures.

The net farm values considered are those obtained by subtracting from the gross farm values of all products the amounts paid for fertilizers, feeds and labor. These net values were first obtained for 1909 and were for the United States, $5,000,000,000; for New England, $170,000,000; for Massachusetts, $33,000,000. The deductions amount respectively to 17%, 32% and 45%. In other words, the United States farmer spends one-sixth of the gross farm value of his products for purchases of feed, labor and fertilizer, the New Englander one-third, the Massachusetts man almost half. The effects of these deductions are distinctly shown in the leveling of the gross to net values per worker and work animal, and especially per farm; they are graphically shown in the graph of gross and net farm values of farm products. The New England farm makes almost $900 net, the Massachusetts farm makes $10 less, and the average farm of the United States makes $800. Somewhat similar relations occur in the case of work animals except that the United States figure is $230 below that for Massachusetts which is $518; New England's is $492. But per worker, the New England man makes $600 a year, the Massachusetts man $490, while the worker for the United States makes $400. Net production per worker is the best basis of comparison.

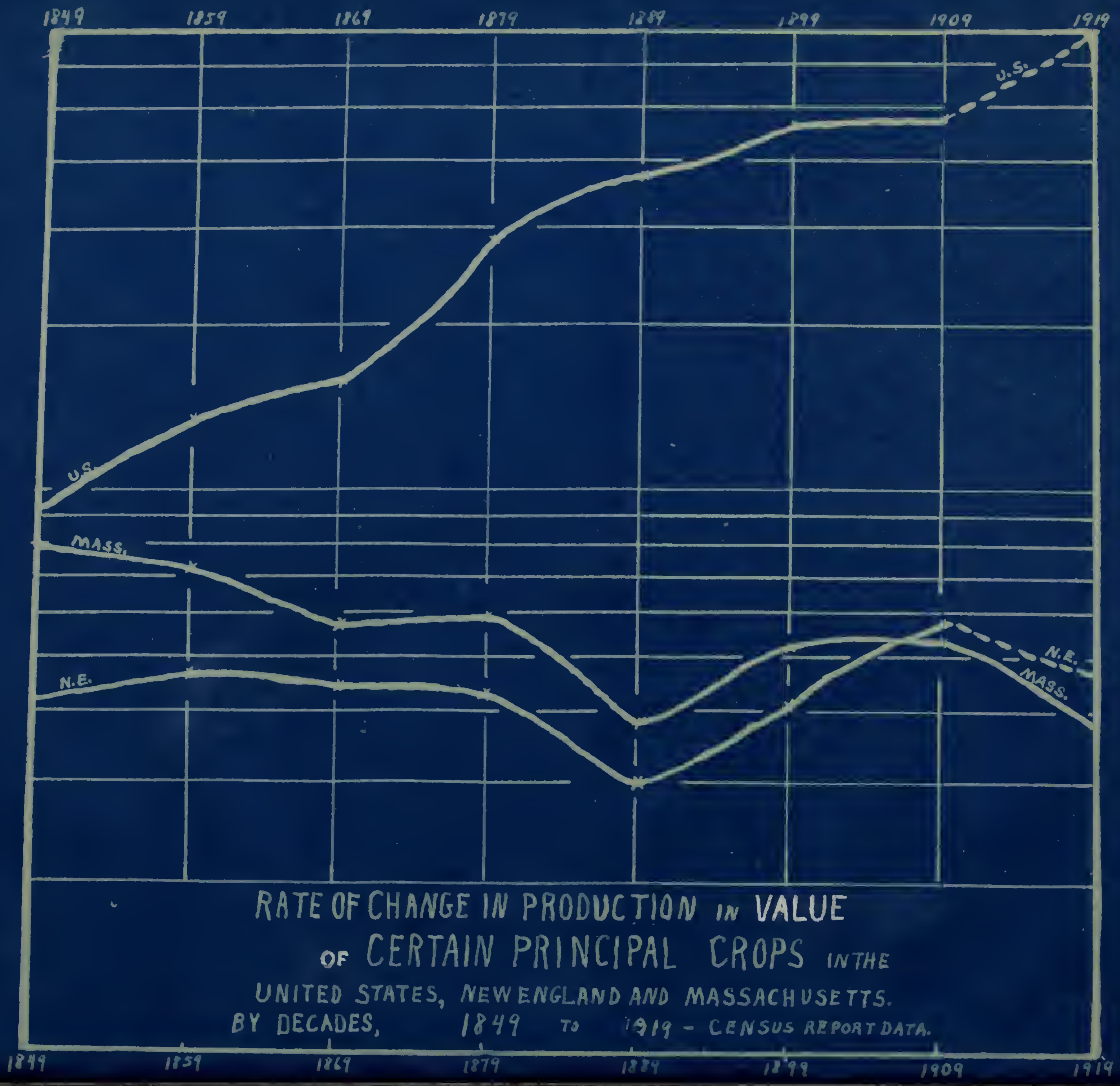
Summary of Production

In general, Massachusetts has lost most of her small grain production; New England has gained in hay production the crop being the most valuable of those of New England and Massachusetts (13c/370, 731) in 1909. In hay and forage New England leads per worker. In potato production New England leads per acre and per worker; Massachusetts, though less than New England, still shows higher figures than those of the United States. The tobacco crop has shown great gains in acreage and production, the Massachusetts rate exceeding others. Massachusetts

Crops considered in the graph showing

> "Rate of Change in Production in Value of Certain Principal Crops in the United States, New England and Massachusetts"

are Barley, Buckwheat, Indian Corn, Hay and Forage, Oats, Irish or White Potatoes, Dry Pease and Beans, Rye and Wheat.



RATE OF CHANGE IN PRODUCTION IN VALUE OF CERTAIN PRINCIPAL CROPS IN THE UNITED STATES, NEW ENGLAND AND MASSACHUSETTS. BY DECADES, 1849 TO 1919 - CENSUS REPORT DATA.

leads in production of tobacco per worker, New England following closely and leading slightly in yield per acre.

In tree fruits, Massachusetts' apple yield has made great gains, doubling - in contrast to New England which shows but slight gain and to the United States where no change is reported. Likewise the yield per bearing tree, per farm and per worker has grown until Massachusetts leads the nation. New England leads in bearing peach trees. Massachusetts produces more pears per tree than the rest of the country. But on the whole, the tree fruits have not gained in proportion to population.

New England holds the lead in maple sap production per farm and per worker, but Massachusetts has lost much of her small amount.

In small fruits, Massachusetts leads in all ways in production of cranberries compared with the rest of the nation; the State is losing in the total production of strawberries, fewer farms growing them, but still leads in yield per crop acre, per worker, and per farm. It is not safe to place too much confidence in conclusions based upon these limited data, but the other small fruits collectively seem to be declining in total production. Massachusetts still leads per worker.

All New England is gradually losing her dairy cattle; Massachusetts has the most productive animals, 500 gallons per cow; New England cows average 450 gallons. The data used seem to indicate [illegible] decreasing yields per animal. Butter production in all New England is declining, being very small at best; so little cheese is made as to be negligible.

Up to 1909 Massachusetts gained in total egg production somewhat as in population. In production per bird and farm, the state takes first place.

New England's wool clip is nearly negligible and still declining in comparison with that of the rest of the nation.

In value of market garden products Massachusetts is steadily gaining, both in absolute value and in proportion to value of all farm products, but losing in value of animal products. The total value of all farm products is gaining steadily, more than keeping up with the increase of population. For New England the value of all farm products is gaining as steadily; the proportions of crop and animal products tend to remain about the same; and the relatively small market gardening ones rise slowly. Total values of farm products in the United States, New England and Massachusetts are rising at almost the same rates and somewhat faster than increase of population at the same time.

IV. PRODUCTION OF FARM PRODUCTS IN RELATION TO POPULATION AND CONSUMPTION NEEDS IN NEW ENGLAND AND MASSACHUSETTS.

It is often said New England should produce more foodstuffs than she does at present. Is it possible to do this at a fair profit on our soils? That will determine whether or not it will be done.

The tendency of much land once improved has been to go back to sprout or woodland, and much land more readily tillable than this lies idle. One estimate (40) states that in New England 2,500,000 acres assessed at $10 or less per acre can be, presumably even at present high costs, made ready and equipped with buildings and tools for $100 or less per acre. That addition would be equivalent to the whole amount of farm lands of Massachusetts and two-fifths the improved farm acreage of New England. Another estimate (36) states that nearly 2,000,000 idle acres in Massachusetts alone are capable of producing food.

Much of this idle soil is capable of production. The United States Department of Agriculture considers (34/37) New England soils merely neglected, not worn out, responsive to proper use; the problems are said to be simply those of finding the abilities of the varied soils and crops suited to them. It calls attention to the great extent of virgin soil in northern New England. That it is not usually profitable to grow crops requiring extensive culture - such as grains - in New England is generally admitted. That too often pioneers in the states made mistakes in selection of farm sites and that their successors often fought the handicaps of these errors is also true. As years went by and developments in the nation's agricultural processes took place, these handicaps proved too burdensome, and the lands were abandoned (4[illegible]). Whereas once topography counted for comparatively little, machinery has become an important part of modern farm equipment, requiring for economical usefulness larger fields, greater freedom from rocks and more level lands. New Englanders have too long clung to old-time ways and means, reluctant to change. When the signs of the times are recognized and fully complied with, it will result in readjustment of farm lands, farm crops and farm methods. It has already been noted that there has been and is now a tendency of values of certain classes of farm products to change in proportion, whether voluntary or involuntary.

Much New England farming has proved unprofitable because outsiders have been able to undersell the nearby producers, and this is due chiefly to the fact that New England production is usually on a small scale and each unit produces a variety of products of varying standards, often lacking conformity to any reasonable standard of excellence. In addition to being a small producer, the New Englander is an unorganized worker, showing little or no interest in cooperation in production, in pooling of goods, or in marketing. The dealer seeking a large quantity of uniform, dependable farm products is likely to look elsewhere than to a New England producer; he knows he can seldom get the required bulk of one farmer and that he can seldom get standardized products. Community uniformity of methods, pooling of crops and careful packing and shipping - in other words, cooperative action adapted to the situation - carried into effect would work wonders in more places than the few where it has been attempted successfully. It should help farmers displace shipped-in products with their own so far as they can produce and sell them profitably in competition with the others. Better roads and transportation facilities are now needed to bring back within profitable reach of markets many districts well adapted to production of crops.

The accompanying tables of the various agricultural products show production per unit or per capita. Massachusetts since 1849 or 1859 has grown upon this basis annually less and less of the small grains and of corn until her production, small at best, is insignificant. Even potatoes have dwindled from 3 1/5 bushels per capita, probably almost enough for a person, to a half bushel. Of the field crops, tobacco alone shows gain on the whole; but tobacco is not a food.

Of tree fruits, apples tend to hold their own in comparison with population each year, Massachusetts producing about 3/4 bushel per capita; the small production of peaches gains, while that of pears drops slightly. Maple sugar and syrup considered as sugar have dropped from nine-tenths of a pound to one-eighth of a pound. In cranberry production Massachusetts leads, much more than supplying her own needs while it falls low in strawberries and small fruits.

In animal products, Massachusetts provides less and less, in 1909 about 27 gallons of milk per capita; in 1919 this had fallen to barely 20 gallons. Of butter she produced about a pound per capita per year, almost no cheese or wool and about one egg for each person per week in 1909, and even this had fallen about 30% in 1919. In all these respects, Massachusetts would starve in a hurry if compelled to shift for herself. The addition that market garden products might make would amount to less than two dollar's worth per person a year.

As to New England, the situation as to small grains is practically the same as that of Massachusetts, but with the production of oats declining most slowly. Corn tends to decline at about the same rate. Hay and forage when compared to the numbers of livestock are ample for its needs. New England leads the country in white potato production, providing five to six bushels per capita, enough for the ordinary consumption of its population.

Of apples, the production in New England dropped from 3¼ bushels per capita in 1889 to 1½ bushels in 1909 or 1919; peaches and pears are so few as to be negligible. Maple products are only two pounds per capita - half the production of 1880. Cranberry production per capita is roughly half that of Massachusetts, but the crop outside Massachusetts amounts to little. Strawberries are produced in the same relative amounts as in Massachusetts. Other small fruits are produced in somewhat larger quantities per capita than in Massachusetts, but with only about a pint per capita.

In 1909 New England produced 60 gallons of milk per capita, a decline of 25 gallons from 1889; six pounds of butter per capita were made, but practically no cheese. Milk production seems to be sufficient for needs. Almost nine dozen eggs per capita are produced annually, insufficient for the needs of the population. Wool sheared is now less than a third of a pound per capita, much less than the weight of an ordinary wool sweater. On the basis of these items, New England would last but little longer than Massachusetts if confined to its own supplies.

Definite figures as to the foodstuffs brought into New England from outside are not obtainable. Estimates have been made, mostly dealing with foodstuffs. President K. L. Butterfield, of the Massachusetts Agricultural College, said New England imports 75% of her foodstuffs. (39) Various persons have estimated Massachusetts imports from 80% to 95% of her foods. A recent careful study of the state's consumption and production by Dr. A. E. Cance and Miss Lorian P. Jefferson, of the Department of Agricultural Economics at the Massachusetts Agricultural College, estimated that the state in 1909 produced 6.39% its animal and vegetable foods, in 1919 5.43%, or 15% less. That total would supply only a third of the population of Boston alone in 1909, and less than that in 1919. That study considered production and consumption of cereals, vegetables, peas and beans, fruits, nuts, maple products, honey and wax, meat animals, dairy products and eggs, also of tobacco, and consumption of tea and coffee.

V. ECONOMIC TENDENCY OF AGRICULTURE TO SHIFT

The most successful agriculture is the one producing greatest value per worker engaged in it. This means methods of extensive culture and quantity production which makes wise more specialization than is the rule in New England. This is the reason most of the nation's grains are produced on the western plains in a climate somewhat more favorable, a topography permitting use of extensive methods of crop handling almost unheard of in New England, a soil of vergin fertility up to comparatively recent years. For this reason also the crops will continue to be largely grown there despite the tendency of costs to rise in recent years. Given access to markets at reasonable cost grains can be shipped long distances. Improvements in transportation methods and facilities in the last forty years have made possible the shipping of many perishables in car lots for hundreds of miles, so that now Oregon apples, California asparagus and Georgia peaches are common in our markets in season.

Therein lies the explanation of many idle New England lands. Production is no longer economically possible in competition with districts able to reach the same markets more cheaply and make a profit. The old self-sufficiency of earlier days is gone; the farm no longer can cater to the increasingly varied demands of its owners, for those have changed much as have those of urban people.

One has only to glance over fruit and vegetable stands or over a grocer's shelves at any time of the year to realize that there are commonly on sale many products which can not be produced in New England, or that are grown locally under glass or shipped in from warmer regions and sold out-of-season here. The possibilities of shipping perishables long distances and the growing public demand for out of season luxuries have developed great trucking industries and business of catering to tastes which New England is not climatically adapted to supply. Almost any breakfast table has upon it products from widely separated points - coffee from Java or Brazil, butter from Wisconsin or Denmark, breads made from flours from Minnesota, steak from the Southwest, fruit from California. These are such ordinary things one seldom stops to think what people have contributed to the preparation of the meal.

As it is now, Boston, for instance, receives its milk from a distance averaging 240 miles; its cereals and meats from over 1,000 miles; its halibut and canned salmon from the Pacific Coast, over 3,000 miles away; its sugar from Cuba; its early vegetables from the Gulf States; its canned vegetables from Maine to Wisconsin. (34/50)

It is hard to picture modern people living in the so-called "good old times" when the farm raised its own wheat or corn to be ground at a nearby water-power mill for coarse bread, its own bacon and salt pork, its limited supply of vegetables and fruits, its own linen and wool, when it did its own baking (and brewing), wove its own cloth. Most of these things are now produced and manufactured in districts or factories which can more cheaply produce products of greater variety and superior quality and usefulness. That means economy for the buyer and in the long run determines procedure. So it is out of the question for Massachusetts or New England to attempt to be self-sufficient - for it would mean greater costs and far too few means of satisfying public demands.

VI. SOME CHARACTERISTICS OF NEW ENGLAND AGRICULTURE JUSTIFIED

Much criticism is made of the conservatism, of the individualism, and of the methods of the New England farmer. Conservatism, opposition to voluntary change of established methods, has long been a characteristic of New England farmers for which it sometimes seems as if they were blamed beyond their due; it is characteristic of any people who have achieved reasonable success. It is justified by past successes upon the basis that what has worked before should do for the future. Farming is usually not a very profitable enterprise, and the cost of trying new methods, or modern machinery if not successful, may easily cost more than the meagre profits if not a success. Seeming fitness of current habit and methods to existing conditions, ignorance of information upon others in use elsewhere and scepticism as to their adaptability to his own circumstances makes the New England farmer conservative.

Individualism has been a characteristic of New England agriculture. At first the farm family could care for practically all its needs; then when sale of products began, it was to nearby consumers or buyers. This is still so to a great extent. A comparatively wide variety of products was turned out for the family, then for sale, and these were naturally in small quantities and of diverse quality. This tendency persists to the present day, usually making such diversity that cooperative endeavor is impossible or very difficult. Beyond the personal tendency to diversification of production is the fact that in large sections of New England there are found upon a single farm of average area many types of soil and topography each with its characteristics, compelling diversification.

Various practices of New England farmers are criticized more or less unthinkingly. The use of oxen instead of horses, or of horses instead of power machinery on farm and road is called backward at times; but one critic notes (41) each has its place and usefulness in certain types of farming. The typical New England stone fence and small, irregular field has its beginning in the times when land had to be cleared along lines of least resistance and when large use of hand tools allowed small plots. Today the machinery in common use, both animal and power driven, demands larger and more regularly shaped tracts for economical operation; and the use of machinery itself is imperative by the necessity for greater economy of production and use of man and animal power.

Note has been made of the variety of crops grown by the average farmer, and of the necessity for it due to varied soil and topographical conditions.

Wastefulness of methods has often been criticized; the fact that New England uses so much purchased fertilizer is cited as proof that her soils have been cropped without consideration for the future. It is true of any new country that production even there is along the lines most economical at the time being; much of our west is just getting to the stage where it, too, must admit its soil is no longer virgin, that her soils have lost part of their fertility. New England thrift aims to make everything count but conservation of resources is at times uneconomic for the time being; such a policy must wait for times of greater need, and will then be applied.

VII. SUMMARY AND CONCLUSIONS.

Between 1850 and 1910 the number of agricultural workers in Massachusetts varied but little, but the percentage to total population dropped from five to two. Farms varied in numbers, alternately gaining and losing, barely holding steady on the average; they lost 10% of their total area and 45% of the improved lands up to 1910; losses in all these phases followed between 1910 and 1920. Values of farm property nearly doubled to 1910, those of Massachusetts nearly equalling those of the United States per farm, and exceeding those of New England. Acreage of improved farm land per worker declined half, while the use of animal power increased. Massachusetts on the whole increased her dairy, poultry and swine, losing most of her few sheep.

In the same period New England as a whole has had a slight net loss in number of agricultural workers, dropping from 9½% to 4½% of the total population. The number of farms remained about the same as in 1850 up to 1910, but 40% of the improved farm acreage and 47% of that acreage per worker were lost. Average farm values were less than those of the United States most of the time, although both increased greatly. Neat cattle, farm horses and poultry increased in numbers. Swine merely held their own, with sheep losing fast. Between 1910 and 1920 New England lost about 15% of her farms and improved lands and horses; some losses have occurred in all classes of farm animals except neat cattle.

From 1850 to 1910 the United States shows development in absolute figures. In number of farm animals per worker there has been a decline in all except poultry which increased 45%; in acreage of improved farm lands per worker there has been a decline everywhere of 25%.

Massachusetts and New England had practically ceased to grow small grains by 1910, except that oats retain considerable value in New England outside of Massachusetts. The corn crop has declined less in bulk than any other grain crop. New England has greatly increased its potato crop while Massachusetts has lost a third of hers. The tobacco crop made great growth from small beginnings in New England and especially in Massachusetts where it has become a very important crop with an average yield per acre double that of the national crop.

Between 1889 and 1909 New England and Massachusetts by increasing the production per tree much above the average of the nation have increased their productions of fruit crops, especially apples.

Since statistics of the crop were first taken in 1899, Massachusetts cranberry production has dominated the nation's crop and increased in absolute quantity, in production per farm and in production per crop acre.

Massachusetts leads in small fruit production - strawberries and other small fruits - per farm and per worker, although showing apparent decline in amount of the crops.

Since 1880 New England has led in maple sugar and syrup production per worker and per farm, with Massachusetts a poor second.

Since data was first given for 1889 Massachusetts has had the most productive dairy cows and dairy farms, but both are decreasing in number, especially the latter. Total milk production is likewise declining in Massachusetts. The New England dairy industry follows that of Massachusetts closely. Butter and cheese production is negligible.

Egg production kept pace with population everywhere from 1889 to 1909, and increased per bird and per farm reporting poultry. The greatest increase per bird was in the United States, from less than three dozen to a more reasonable figure of nearly five and a half dozen.

Wool production, of little consequence in New England at any time, has become quite negligible in Massachusetts.

From 1879 to 1899 market garden products increased most markedly in sales values in Massachusetts, from 7% of the total value of farm products in 1879 to 11% in 1899 and 13% in 1919, indicating a decided change in the kind of agriculture and the crops raised. The rate of increase of total gross farm values of all farm products is somewhat greater in Massachusetts and the United States in turn than it is in New England; but Massachusetts shows greater values per farm, per workman, per work animal and per acre of improved land than does New England or the United States.

The average Massachusetts farm had in 1920 decidedly the heaviest expense for feed, labor and fertilizer compared to the gross farm value of its products, and with these deducted from the gross farm values of farm products fell below the New England farm in net farm values of farm products per worker and per farm, but exceeded it in values per work animal. The United States was third in each respect.

In production, New England on the whole has fallen far below the needs of her population. She produces very little grain, tho the hay and forage and the potato crops seem sufficient. Massachusetts grows far more cranberries than she uses; of small fruits she has decreasing amounts. Milk, while decreasing in quantity in New England, is still ample and allows for the manufacture of a little butter and cheese.

All New England has much more land capable of crop production than it is economically practical to use it. Methods must change to some extent to permit more economical culture, and the adoption of standardized production in larger quantities will warrant local pooling and co-operative marketing. When farmers everywhere in the nation have reached the same point of production New England should be able to use profitably more of her land, not to produce crops better grown elsewhere but to grow those [illegible] producing greatest net values to workers here, still buying those others which she cannot grow at a profit.

New England production will probably never gain greatly on population under present conditions, but with intensive methods which develop as a country grows older, production in value may gain on population, but that will probably mean decreased values per worker. Even at present the Massachusetts and New England farmers are doing as much or more than their grandfathers. The decline of agriculture noted in some directions is met by advances in others which more than offset losses. New England agriculture is not declining but changing in type.

VIII. Bibliography

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